

THE SOUTHERN CROSS
Domestic Science

CONTAINING
THREE YEAR COURSES
IN
COOKERY HOUSEWIFERY & LAUNDRY
WORK



WHITCOMBE & TOMBS LIMITED

Auckland, Christchurch, Dunedin, Wellington N.Z.
Melbourne and London

1/6

THE SOUTHERN CROSS DOMESTIC SCIENCE

CONTAINING
THREE YEAR COURSES
IN COOKERY, HOUSEWIFERY & LAUNDRY
WORK

FOR SCHOOLS

(Specially written to meet the requirements of Cookery and Domestic Hygiene as set out in the Primary School Syllabus; the B Course in Housecraft as required for the Senior National Scholarship, and the City & Guilds of London Institute Examinations)



WHITCOMBE & TOMBS LIMITED

Auckland, Christchurch, Dunedin, and Wellington, N.Z.
Melbourne and London

CONTENTS

			Page
COURSE I.	...	...	5
LAUNDRY WORK	...	...	73
COURSE II.	...	...	101
COURSE III.	...	...	148

SOUTHERN CROSS DOMESTIC SCIENCE

COURSE I.

LESSON I.—INTRODUCTORY.

I. **DOMESTIC SCIENCE** is made up of all that mass of knowledge which relates to the management of a household. The chief divisions of the subject are

1. Housewifery or the proper management of a house and care of its inmates.
2. Laundry Work.
3. Cookery.

To understand these thoroughly requires some knowledge of science. Simple experiments will show this.

II. **FOOD** is any substance which, when taken into the body helps to support life, either

1. by producing heat and energy
- or 2. by building up bone, flesh, tissue, blood, etc.

The air we breathe and the water we drink are foods as well as the things we eat.

III. THE USES OF FOOD.

1. To build up different parts of the body.
2. To maintain the heat of the body.
3. To repair waste due to the expenditure of energy.
4. To maintain the body in a healthy condition.

IV. CLASSES OF FOODS. Food substances fall into three groups.

1. **Flesh-forming** foods or **proteids** are also called nitrogenous foods because they contain nitrogen. The chief proteid is albumen, which is a compound of carbon, oxygen, hydrogen, nitrogen, and sulphur, and is found in meat and eggs.
2. **Carbonaceous** or **heat-giving** foods, including fats and oils, and the **carbohydrates** starch and sugar.
3. **Mineral** substances such as phosphorus, lime, common salt, and iron, needed to form bone and to keep the blood healthy. These are contained in water, milk, grains, as well as in the juices of fresh vegetables and fruit.

V. IMPORTANCE OF A VARIED DIET. Different parts of the body are built up of different constituents. No one food contains all these constituents in the right proportion for man's requirements. Hence a variety of foods is needed. The amount of food required every day varies with the climate and the season, as well as with the age, sex, and occupation of the person. The right proportion and weight of different foods is called a **balanced ration**.

VI. COOKERY is the work of preparing food for the use of human beings. It includes all preparations, such as cleaning and dressing, as well as the actual cooking of food.

VII. REASONS FOR COOKING FOOD.

1. To tempt the appetite.
2. To render food more digestible.
3. To bring out the flavours of different foods.
4. To sterilise food, that is, to destroy disease germs latent in it.

VIII. IMPORTANCE OF A KNOWLEDGE OF COOKERY.

1. Well cooked food is necessary to health.
2. Badly cooked foods injure the digestion, and may lead to ill-health.
3. Specially prepared foods are necessary for (a) children, (b) invalids, (c) the aged.
4. Good food eaten in moderation affords wholesome pleasure.

IX. ESSENTIALS OF A GOOD COOK.

1. Cleanliness in person, dress, and habits.
2. Forethought, in order to plan and arrange beforehand.
3. Orderliness and methodical habits. Having a place for everything and everything in its place, as well as doing things in the right order to save time.
4. Knowledge of both theory and practice of cookery.
5. Punctuality. Cooking cannot be hurried, and meals must be served to time.
6. Industry. A good cook is never idle.
7. Economy. Food, utensils, and firing should never be used wastefully.

X. HOW TO LAY A FIRE.

1. Rake out all ashes, and all cinders except from back of grate.
2. Place dry crumpled paper or a piece of kindler on the bottom of grate.
3. Arrange thin pieces of dry wood in layers crossways above the paper.
4. Leave plenty of spaces for a free draught.
5. Place small pieces of bright coal on top.

XI. WASHING-UP AFTER DINNER.

1. Empty cups and scrape plates.
2. Arrange all of one kind together.
3. Use plenty of clean hot water and some soap (or soda).

4. Wash cutlery first, without letting knife handles remain in hot water.
5. Wash non-greasy things first, pots and pans last.
6. Drain well, and then dry while still hot with clean cloth.
7. Put away in cupboards, etc.

XII. EXPERIMENT to show that foods contain carbon. Place a little bread, potato, sugar, and meat in test-tubes, or on a tin plate, and heat strongly. Note that water vapour is given off, and black carbon remains.

LESSON II.

I. CONSTRUCTION OF A COAL RANGE.

The chief parts are the grate or firebox, the oven, the flues, and the dampers, also a boiler connected with the hot water system.

A flue is a passage by which heat, flames, smoke, etc. pass from the fire into the chimney.

Dampers are flat metal plates used to control the draught in the flue passages.

Soot doors are at the bottom of the flues below the oven.

The oven should have two ventilators, one to let out steam and heat, the other to let in air.

The iron boiler behind the fire grate is supplied with cold water from a tank, and sends hot water to a storage cylinder.

II. HOW TO MANAGE A COAL RANGE.

1. Management of dampers:

- (a) To light the fire, pull all dampers out.
- (b) To heat the boiler pull out boiler flue damper only.
- (c) To heat the oven pull out damper over oven.

2. To clean the stove when cold:

Note.—First put on a cap and an apron to protect the hair and the clothes.

- Daily (a) Remove all ashes.
(b) Remove grease with turpentine.
(c) Brush up and polish with soft cloth.
- Weekly (a) Take all parts to pieces and brush them.
(b) Brush all flues and top of oven clean.
(c) Remove the soot and cover it.
(d) Scrub out oven with hot water and soda.
(e) Blacklead and polish.
(f) Polish steel parts with bath-brick or fine emery paper.

Chimney Sweeping.

Have chimney swept once in spring and again in autumn if necessary.

Blackleading.

- (a) Mix with warm water and a little turps.
(b) Put on thinly, a little at a time, with a soft brush.
(c) Rub with hard and then with a soft brush.
(d) Polish with a velvet pad.

Tiles.

- (a) Wash with hot soapy water.
(b) Dry and polish with a cloth.

Hearth.

- (a) First sweep and then wash.
(b) Rub over with hearthstone or pipeclay.
(c) Smooth with damp cloth.

III. HOW TO MANAGE A GAS STOVE.

1. Management of oven and griller.

- (a) Before using, light oven burners and turn on full for 15 minutes.
(b) Reduce gas one-half when cooking begins.
(c) Use solid or browning shelf, called the reflector to divide heat in the oven, the upper portion being the cooler.

(d) Lessen bottom heat by placing a grid shelf and then a small-sized solid shelf on floor of oven.

(e) The griller should be red-hot before using.

2. **To clean a gas stove.**

(a) Scrape and wash burners with soda and water.

(b) Wash top if greasy, also the oven.

(c) Blacklead and polish.

(d) Polish taps with Brilliantshine or powdered bath-brick.

IV. **MILK** is called a perfect food because it contains the food constituents required by young people in the right proportion. It will support life longer than any other single food.

1. **Experiments:—**

(1) (a) Skim cream off some milk.

(b) Warm and shake it in a bottle.

The cream separates into butter-fat and butter-milk. The latter is sweet and contains a form of sugar called sugar of milk, or lactose.

(2) Add a few drops of vinegar, rennet, or weak acid to a glass of milk. It separates into curds (or cheesy matter) and whey (water, lactose, albumen, lime).

(3) Test milk with iodine. There is no sign of starch.

2. **Average composition of cow's milk:—**

(a) Water, 87%; (b) protein (chiefly casein or curds 2.5%, and albumen .7%), 3.3%;

(c) sugar (lactose), 5%; butter-fat, 4%;

(e) mineral matter (chiefly phosphate of lime), .7%.

V. **SUGAR.**

1. **Properties.**—Sugar is a sweet crystalline substance, soluble in water.

2. **Sources of supply.**—It is found in most ripe fruits as grape-sugar, dextrose or glucose, while cane sugar, (sucrose or saccharose) is

prepared from sugar cane, beet-root, and maple juice.

3. **Uses.**—It is used for sweetening and preserving foods, and in the making of beverages and confectionery.

4. **Food Value.**—Sugar is one of the carbohydrates, supplying heat and energy to the body. It is easier to digest than starch, but harmful if taken in excess.

5. **Tests for sugar.** See page 107.

VI. EXPERIMENTS WITH STARCH.

(a) Stir some starch up with cold water. A thin cream is formed, proving starch to be insoluble in water.

(b) Add about twice the volume of boiling water and stir well. The tiny starch grains or cells burst and run together, forming an opaque liquid used for stiffening table linen, etc.

(c) When cool add a few drops of iodine solution. A beautiful blue colour is produced.

(d) Grate a clean potato into clean water. Collect the farina or starch and test with iodine.

Starch is a constituent of all plants and cereals, *e.g.*, potato, tapioca, wheat, rice, etc. It is one of the carbohydrates, and gives heat and energy to the body, but does not build or repair tissues. Starch must be thoroughly cooked before it is of use as food. The cooking bursts the starch grains and softens them. Starch must be changed into sugar by the saliva in the mouth before it can be made use of by the body. See "Digestion," page 63.

VII. RULES FOR MILK PUDDINGS.

1. In baked puddings allow 2 ozs. rice, sago, tapioca, etc., to every pint of milk, less if eggs are used.

2. If skim milk is used, add a little butter or beef suet to keep up the food value.

3. Cook a long time and slowly to allow the starch grains to swell and burst.
4. Eggs should be added when pudding is nearly cooked.
5. Place dish in a tin containing a little water to ensure slow cooking.

RECIPES.

MILK PUDDING.

Sago or rice, 1oz.

Sugar, $\frac{1}{2}$ oz.

Milk, $\frac{1}{2}$ pint.

Salt, a pinch.

1. Wash the rice in cold water.
2. Put it into a greased pie dish with the sugar and milk.
3. Bake it in a moderate oven for an hour and a half.

Note.—Tapioca and macaroni can also be used, but must be soaked in cold water for several hours before using.

STEWED APPLES (First Recipe).

Apples, or any kind of fruit, $\frac{1}{2}$ lb.

Sugar, 2 ozs.

Water, $\frac{1}{4}$ pint.

1. Put sugar and water into saucepan.
2. Boil for about five minutes.
3. Pare, quarter, and core apples.
4. Put into syrup and simmer gently until tender.

STEWED APPLES (Second Recipe).

Apples, 4 medium.

Water, 1 teacup.

Cloves, 4, or small piece of
stick cinnamon.

Sugar, 3 tablespoons.

1. Peel and cut apples into quarters.
2. Place in an enamel basin or casserole with sugar, cloves, and water.
3. Cover with a plate or lid, place in the oven, and cook till the apples are soft, not broken, that is, about 1 hour.

Note.—Any fruit may be stewed in the oven, instead of simmering over a fire.

LESSON III.

I. CLEANING.

1. Sweeping Floors.

- (a) Use soft hair broom with long handle.
- (b) Sweep from the walls towards the fire-place.
- (c) Brush steadily so as not to raise the dust.

- (d) Move all furniture and clean out corners.
- (e) Collect and remove dust.

2. Dusting Rooms.

- (a) Use soft clean cloth dusters.
- (b) Dust top of room right round first.
- (c) Shake dusters frequently outside.
- (d) Dust shelves and beneath all ornaments.
- (e) Use soft brush for corners and carved furniture.
- (f) Fold and return dusters to cupboard.

3. Cleaning Linoleum.

- (a) Sweep and dust daily with soft broom.
- (b) Wash with soaped cloth wrung out of warm water.
- (c) Wipe with clean wet cloth, then dry and polish.

4. Cleaning Carpets. Always brush a pile carpet the way of the pile.

Daily (a) Brush gently with a fine bristle hand broom, or use a carpet sweeper.

Weekly (a) Sprinkle a strip at a time with fine lawn grass, damp paper, or clean tea leaves.

(b) Sweep gently with a hand broom or carpet switch.

At intervals of about six months

(a) Hang over a line and beat from the back.

(b) Re-lay and rub over with cloth wrung out of weak ammonia or vinegar and water.

(c) Use vacuum cleaner, if obtainable.

II. HOUSEWIFE'S TABLES.

To Measure Liquids.

1 teacup or 5 tablespoons	= 1 gill or $\frac{1}{4}$ pint.
1 breakfast cup	= $\frac{1}{2}$ pint
4 " "	= 1 quart, 2 pints
1 wine glass	= 2 tablespoons
4 quarts	= 1 gallon.

To Measure Dry Ingredients.

The following measures must be heaped up for ingredients like flour, arrowroot, etc., that weigh light; and they must be level measures for ingredients that measure heavy, such as sugar, butter, currants, etc.

$\frac{1}{4}$ oz.	= 1 teaspoon.
$\frac{1}{2}$ oz.	= 1 dessertspoon
1 oz.	= 1 tablespoon
$\frac{1}{4}$ lb. (4 ozs.)	= 1 teacup
$\frac{1}{2}$ lb.	= 1 breakfast cup
1 lb. flour	= 1 quart flour
1 egg	= 2 ozs.
16 ozs.	= 1 lb.
1 pint liquid	= $1\frac{1}{4}$ lbs. (20 ozs.)

III. FLESH-FORMING FOODS.

1. Commonly known as **proteids**. (See page 6).
2. Also called nitrogenous food, because they contain nitrogen.
3. They also contain carbon, hydrogen, oxygen, and some of them a little sulphur, and phosphorus.

The flesh-forming constituents in different foods are

Myosin and **fibrin** found in lean meat.

Serum albumen and **fibrin** found in blood.

Gelatine found in sinews and bones.

Albumen found in white and yolk of egg.

Casein found in milk and cheese.

Gluten found in flour and oatmeal.

Legumen found in peas, beans, and lentils.

IV. METHODS OF COOKING FOOD.

1. **Boiling** is cooking in deep boiling water (212° F.) over a fire. It is used for meat, fish, vegetables, puddings, jam, etc. (See page 22).

2. **Baking or Roasting** is cooking by hot air as in a hot oven. Formerly roasting meant cooking in the open before a bright fire, a method of cookery rarely used in New Zealand except in the form known as grilling. Baking is used for meat, fish, poultry, pies, cakes, etc. (See page 18).
3. **Steaming** is cooking in the vapour arising from boiling water, and is used for meat, fish, vegetables and puddings. (See page 52).
4. **Grilling or Broiling** is roasting on a gridiron over a bright clear fire. It is used for chops and steaks, also small birds and fish. Like frying, it is quick and convenient, but, though grilled meat is savoury, the method is not economical, as only the tenderest cuts can be used. (See page 115).
5. **Frying** is cooking in smoking hot fat or oil at a temperature of 380° F. It is used for fish, chops, sausages, steak, potatoes, eggs, fritters, rissoles, etc. (See page 26).
6. **Stewing** is cooking slowly in a small quantity of liquid, part of which consists of juices extracted from the foods being cooked. It is used for meat, vegetables, and fruit. It is the most economical method of cookery because
 - (a) Nothing is lost, everything being served up.
 - (b) Slow cooking makes tough meat tender.
 - (c) Little firing is needed.
7. **Braising** is a combination of stewing and roasting or baking, the food being first stewed slowly in a covered pan, and then browned in a very hot pan or oven. It is used for meat and vegetables, poultry, rabbits, etc.

RECIPES.**IRISH STEW.**

Neck of mutton, 1 lb.

Potatoes, 4 or 5.

Onions, 2 or 3.

Water, $\frac{1}{2}$ pint.

Pepper and Salt, to taste.

1. Cut the meat into neat pieces and trim off the fat.
2. Slice the onions and cut potatoes into thick slices.
3. Put the meat in a saucepan, lay the vegetables on top.
4. Sprinkle in the salt and pepper.
5. Add the water, put the lid on the saucepan, and bring to the boil.
6. Simmer gently for about an hour and a half.

Note.—This stew may be baked in the oven in a pie dish or casserole.

BROWN SCONES.

Wholemeal flour, 2 teacups.

Flour, 1 teacup.

Sugar, 1 teaspoon.

Baking Powder, $1\frac{1}{2}$ or 2 teaspoons.

Dripping or Butter, 2 teaspoons.

Milk, about 2 teacups.

Salt, $\frac{1}{4}$ teaspoon.

1. Rub the butter into the flour.
2. Add salt, sugar, and baking powder.
3. Mix into a light soft dough with milk.
4. Roll out, cut into rounds or squares.
5. Brush with egg or milk, bake in a quick oven.

WHITE SCONES.

Flour, 2 breakfast cups.

Salt, $\frac{1}{2}$ teaspoon.

Sugar, 1 teaspoon.

Cream of tartar, 2 level teaspoons.

Soda, 1 level teaspoon.

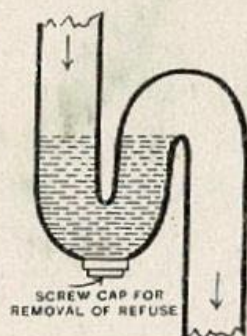
Milk, about 2 teacups.

1. Put the flour into a basin.
 2. Rub the soda, cream of tartar, salt, and sugar through a strainer into the flour, and mix well together.
 3. Add the milk quickly, mixing with a knife.
 4. When made into a soft dough, turn on to a floured board.
 5. Roll out rather thick, and cut in small shapes.
 6. Place on a hot floured tray, and bake in a hot oven about 7 minutes.
-

LESSON IV.

I. CARE OF KITCHEN SINK.

1. Avoid choking drain with solid refuse or grease. (Use sink basket).
2. Flush frequently with boiling water and soda.
3. Clean trap and disinfect weekly.
4. Scrub woodwork surrounding sink.
5. Wash sink well with hot water and soda.
6. Scour with sandsoap.
7. Polish taps with Brasso.



Siphon trap in sink pipe to prevent return of foul gas into the house.

II. TO CLEAN WINDOWS.

1. Remove or pin back curtains, etc.
2. Dust blinds and framework.
3. Wash glass with flannel or chamois-leather wrung out of warm water.
4. Rub with dry cloth or tissue-paper.

N.B.—Do not attempt to clean windows with water during frost, rain, or bright sunshine. Windows may be cleaned with kerosene or Bon Ami soap even when the sun is shining.

III. EXPERIMENTS.

1. Action of heat and of acid on albumen.

Take a little white of egg (almost pure albumen) in two test-tubes. Heat one, and drop a few spots of nitric acid into the other. The albumen coagulates or turns solid. The temperature is about 115° F.

2. Action of salt and of soda on green vegetables.

1. Boil a quart of water in each of four enamelled saucepans.
2. Into A put $\frac{1}{4}$ teaspoon soda.
3. Into B put $\frac{1}{4}$ teaspoon soda and $\frac{1}{2}$ teaspoon salt.

4. Into *C* put $\frac{1}{2}$ teaspoon salt only. *D* has water only.
5. Prepare a small cabbage and put $\frac{1}{4}$ in each saucepan.
6. Boil till tender. Take out and examine result.

D has faded most, and *B* least. *B* is best flavoured, and *D* the least pleasant to taste.

Both salt and soda check loss of colour. Salt improves the flavour, and soda shortens time of cooking.

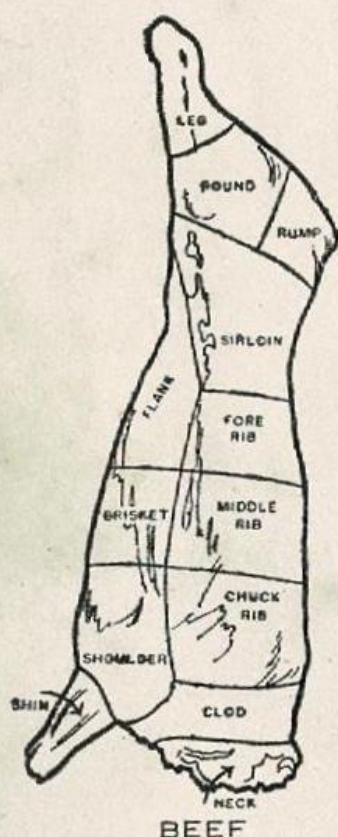
IV. ROASTING OR BAKING.

1. Roasting as a method.

Though the most savoury method as no juices are lost and abundant gravy is formed, roasting is expensive; for, not only must the best joints be used, and a good fire kept up, but there is a loss of weight amounting to 4 ozs. in the lb.

2. Rules for roasting.

- (a) Choose the best joints, tender, fat, and not too fresh.
- (b) Wipe meat with damp cloth, and put in baking tin.
- (c) Sprinkle with flour and put spoonful of dripping on top.
- (d) Place meat in very hot oven for ten minutes, to close the pores and keep in the juices; then cook more slowly.
- (e) Maintain a steady fire.
- (f) Baste often to keep the outside moist.
- (g) Brown both sides.
- (h) Serve with brown gravy.



Joints of beef.

3. **Time**—For beef and mutton: 15 mins. for every lb. and 15 mins. over.
For veal and pork: 20 mins. for every lb. and 20 mins. over.

RECIPES.

ROAST MEAT.

Roast topside of beef as instructed above.

BROWN GRAVY.

1. Pour most of the fat out of the baking tin.
2. Dredge some flour into the tin, and brown over the fire.
3. Add salt, pepper, some hot water or stock.
4. Boil a few minutes and serve.

ROAST RABBIT (Stuffed.)

Rabbit, some slices of fat bacon.

Stuffing:—

Bread, $\frac{1}{2}$ lb.	Pepper, a seasoning.
Suet, 2 ozs.	Egg or Milk, 1 tablespoon
Thyme, Salt, Parsley, 1 teaspoon	

1. Soak the bread in cold water, put in a cloth and press out all the water.
2. Mash the bread with a fork.
3. Chop the suet finely.
4. Mix all ingredients together.

Wash the rabbit, fill with the stuffing, sew side flaps together, cover with the strips of bacon. Bake in a hot oven 1 hour. Serve with brown gravy, made as above.

Note.—The rabbit will be easier to carve if the backbone is broken in two or three places before stuffing.

BAKED POTATOES.

1. Wash, peel thinly, and dry.
2. Place in baking dish around the meat, with a pinch of salt, about 1 hour before joint is to be served.
3. Turn over to brown both sides.

VEGETABLE MARROW.

1. Peel off thick skin and cut into blocks.
2. Remove seeds; wash in cold water.
3. Place in boiling water, with some salt.
4. Boil till tender (20 to 30 minutes).
5. Drain and serve with white sauce or melted butter.

WHITE SAUCE.

Milk, $\frac{1}{4}$ pint
Butter, $\frac{1}{2}$ teaspoon

Flour, 1 heaped dessertspoon
Salt and Pepper.

1. Put half the milk in a saucepan and bring to the boil.
2. Mix flour smoothly with rest of milk.
3. Pour mixture into the hot milk.
4. Cook a few minutes, stirring all the time.
5. Add butter and seasoning.

BOILED CABBAGE.

1. Remove outside leaves and cut cabbage in halves.
2. Soak in cold salted water for half an hour.
3. Put into fast boiling water, with salt and soda.
4. Cook with lid off saucepan for about 30 mins.
5. Drain well, and serve with a little butter and pepper.

FRENCH BEANS.

1. Wash in cold water.
2. Remove stringy parts and cut into thin strips or diamond shapes.
3. Cook with lid off in boiling salted water with a pinch of soda for about 20 minutes.
4. Strain when tender and add a little pepper.

LESSON V.**I. CARE OF KITCHEN.**

- Daily
1. Light fire and tidy fireplace.
 2. Sweep floor, moving chairs, table, and hearth-rug.
 3. Brush or beat hearth-rug.
 4. Dust shelves, scrub table and wash floor when soiled.
 5. Return furniture and hearth-rug to places.
- Weekly
1. Clean chimney flues and range.
 2. Scrub shelves, cupboards, etc., and return contents.
 3. Clean window, polish metal work.

II. CARE OF SCULLERY.

1. Remove food scraps, vegetable waste, etc., to metal dust-bin or fowls.

2. Wash and put away, dishes, pots, and pans.
3. Scour and flush sink.
4. Cleaning and scrubbing as for kitchen.

III. CARE OF PANTRY OR LARDER.

1. Keep cool and well ventilated.
 2. Keep all food covered.
 3. Keep strong smelling foods away from milk and butter.
 4. Dust shelves and sweep floor.
 5. Scour meat safe frequently.
 6. Scrub shelves and floor when necessary.
-

IV. HEAT-GIVERS or CARBONACEOUS FOODS.

1. All heat-givers (starch, sugar, fats, and oils) contain carbon, and are called carbonaceous foods. Starch and sugar contain carbon combined with hydrogen and oxygen in the right proportion (2 : 1) to form water. They are therefore called **carbohydrates** (*hydor* = water). Carbohydrates occur in animal food (milk), and in cereals, vegetables, and fruits.
2. The carbon combines with the oxygen we breathe in and produces heat, and the carbonic acid gas that we breathe out.
3. Examples of heat-giving foods:—
 - (a) **Starch** foods, such as cereals (wheat, rice, maize); also potatoes, peas, beans, and bananas.
 - (b) **Sugar** as found in sugar-cane, sugar-maple, and in beet-root; in milk; in fruits such as figs, grapes, bananas, apples, etc.; also a little in most vegetables.
 - (c) **Animal fat**, as in meat, fish, milk, lard, butter, cheese, yolk of egg, and cod liver oil.
 - (d) **Vegetable oils**, as in oatmeal, cocoa, olive oil, coco-nut oil, and nuts.

V. MEAT AS A FOOD.

Meat includes the flesh of all animals used for food, namely beef and mutton (red meat), pork and veal (white meat), and poultry.

Meat is the richest of foods as it contains—

1. From 13 to 20% proteid matter or flesh-formers as **albumen** and **gelatine**.
2. From 12 to 28% of **fat**, which is heat and force producing.
3. About 1% mineral matter.
4. From 50 to 75% water.

Beef has higher food value than mutton. Lamb and veal contain less nourishment.

Pork is rich and indigestible on account of the fat it contains. Hence it should be served with food that aids digestion. It should be very well cooked to destroy disease germs liable to be in it.

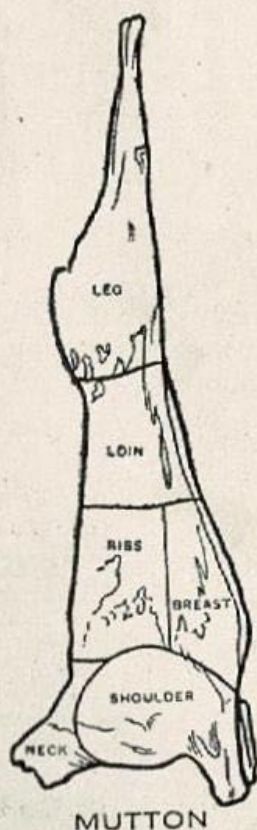
VI. BOILING.

1. Boiling as a method.

Boiling is simple and economical, as little firing is needed, and the cheaper parts of meat may be used. Though some of the goodness of meat and vegetables escapes into the water, this is not lost if the water is used as the basis of broths and gravies.

2. Rules for boiling meat:—

- (a) Place salt meat in cold water, fresh meat in boiling water.
- (b) Boil briskly for 10 minutes to close pores and so keep in the juices.
- (c) Then simmer till tender and juicy.
- (d) Skim, and add vegetables as soon as boiling.



Joints of mutton.

- (e) Serve with sauce.
- (f) Save water for broth or gravy.
- (g) Time 20 mins. to every lb. and 20 mins. over. Salt meat, 30 mins. to every lb. and 30 mins. over.

3. Rules for boiling puddings:—

- (a) All suet puddings must be tied securely in a scalded and floured cloth.
- (b) The water must cover the pudding and be kept boiling, more boiling water being added as the water boils away.
- (c) If the pudding is cooked in a basin, it must be quite filled with the mixture, and tied over with a cloth.
- (d) When the pudding is cooked in a cloth a plate should be put into the saucepan to prevent the cloth from sticking to the bottom.
- (e) Cook a long time and serve hot.

RECIPES.

TO BOIL NECK OF MUTTON.

Scrag end of neck, or neck and breast of mutton, 3 lbs.

Onions, 2.

Turnips, 2.

Carrots, 2.

Salt, 1 teaspoon.

Parsnips, 2.

1. Put the meat into a saucepan with sufficient boiling water to cover.
2. Add a teaspoonful of salt and the prepared vegetables.
3. Boil five minutes to close the pores and keep in the juices.
4. Simmer gently for about one hour and a half.
5. Place the meat on a hot dish, and pour parsley or caper sauce over. (See page 40.)
6. Garnish with the vegetables.

SAVOURY SUET DUMPLINGS.

Flour, $\frac{1}{2}$ lb.

Thyme, $\frac{1}{4}$ teaspoon.

Chopped beef suet, 3oz. or 4oz.

Chopped parsley, 1 teaspoon.

Salt, $\frac{1}{2}$ teaspoon.

Water, to mix.

1. Put all ingredients together in a basin.
2. Mix to a stiff paste with a little cold water.
3. Shape into balls with floured hands.
4. Cook with mutton or in separate saucepan.

BOILED POTATOES.

1. Choose potatoes about the same size.
2. Scrub well in cold water, then peel thinly.
3. Put into boiling salted water.
4. Boil gently about 20 minutes.
5. Test with fork; if tender, strain off water.
6. Place saucepan beside fire, cover with a cloth, and steam for a few minutes.

STEAMED POTATOES.

(N.B.—Steaming is more economical than boiling, and much to be preferred.)

1. Wash and peel, or leave skins on.
2. Soak in salt and water.
3. Steam over water kept boiling briskly.
4. Serve as soon as cooked.

LESSON VI.**I. ARRANGEMENT OF HOUSEHOLD WORK.**

By planning and arranging each day's and each week's work beforehand a great saving of time and labour is effected. Certain duties recur every day; some only once a week, and others at longer intervals. (See page 34).

1. Daily duties include

- (a) Ordering meat, groceries, etc., for immediate needs, and paying accounts.
- (b) Cooking and serving meals.
- (c) Cleaning up after meals.
- (d) Cleaning (dusting, sweeping, scrubbing, and polishing).

2. Weekly duties include

- (a) Washing clothes (drying, starching, ironing, mending).
- (b) Scrubbing floors.
- (c) Scouring and disinfecting sinks.
- (d) Cleaning windows.
- (e) Ordering supplies.
- (f) Baking supply of cakes, etc.

3. Periodical duties (including spring cleaning).

- (a) Chimney cleaning.
 - (b) Dusting books.
 - (c) Washing blankets and curtains.
 - (d) Cleaning walls, pictures, ornaments, blinds, carpets.
 - (e) Airing or washing mattresses, etc.
 - (f) Ordering wood, coal, etc.
 - (g) Paying accounts.
-

II. FOOD VALUE OF VEGETABLES.

The only vegetables of high food value are dried peas and beans, which contain over 20% nitrogenous matter, nearly 2% fat, nearly 60% starch and sugar, about 3% mineral matter, and only about 13% of water. They thus approach meat in their value as food.

The remaining vegetables are of comparatively low food value, though this is largely made up for by other special advantages, such as

- (a) They provide variety,
- (b) are pleasant to taste and therefore useful for flavouring and as a relish with other food,
- (c) prevent us from eating too much strong food,
- (d) are wholesome, as they contain fresh juices and mineral matters that invigorate the blood and prevent scurvy.

Root vegetables are more nutritious than green.

- (a) The potato is the richest, and contains .8% mineral matter (salts, acids, etc.), 16.5% starch and sugar, .1% fat, 1.7% nitrogenous matter, 60.8% water, and 20.1% waste. The mineral lies just beneath the skin, and a good deal of it is lost in peeling.
- (b) Carrots, turnips, and parsnips contain more water and less starch and sugar than potatoes.

Green vegetables consist chiefly of water, cellulose or waste matter, and salts.

- (a) Green peas and beans, called **legumes**, rank highest. Containing very little fat, they should be served with bacon, ham, and pork.
 - (b) Cabbage is made up of .7% mineral matter, 4.9% starch and sugar, .3% fat, 1.5% nitrogenous matter, 77.6% water, and 15% waste.
-

III. **FRYING.**

1. **Frying as a method.**

Frying is the quickest of all methods of cooking, and a most convenient one. The method is extravagant, as only the best cuts of meat can be used, though on the other hand it provides a good way of using up cooked food. The method is not recommended, as fried food, though savoury, is indigestible.

2. **Rules for Frying.**

- 1. Heat fat till it is still and gives off a faint blue smoke.
- 2. Dry food as much as possible, and coat with flour, batter, or egg and crumbs, to keep out the grease.
- 3. When cooked, drain on soft paper.
- 4. Do not fry too many things at once, as this cools the fat too much.
- 5. Strain the fat when frying is finished.
- 6. Wash pan in hot water and soda, and put away dry.

3. **Temperature of fat for frying.**

Fats and oils have no boiling point. The temperature of frying is the highest to which the fat can be raised without being broken up into the elements carbon, hydrogen, and oxygen which compose it. (See diagram on page 126.)

RECIPES.**LIVER AND BACON.**

1. Cover $\frac{1}{2}$ -inch slices of liver with boiling water and let stand 5 minutes to draw out the blood.
2. Drain, and remove the thin outside skin and veins.
3. Cut in pieces for serving, sprinkle with salt and pepper, dredge with flour and cook in bacon fat.
4. Put some thin slices of bacon with rind removed into a hot frying pan and cook till crisp and brown.
5. Serve on hot dish.

FRIED EGG AND FRIED BREAD.

Dripping.
Bread.

Egg.
Salt and pepper.

1. Cut bread into convenient sizes and place in pan with a little boiling fat.
2. Fry both sides golden brown, drain on kitchen paper, and sprinkle with salt.
3. Add more dripping, and break egg gently into boiling fat.
4. Wash the hot fat over egg with a spoon.
5. When all white is set season and serve on fried bread.

FRIED FISH.

Different ways of frying.

1. With egg and breadcrumbs.
2. With milk and flour. (Stir milk little by little into the flour).
3. With batter.

Ingredients of batter.

Flour, 1 tablespoon.
Egg, 1 dessertspoon.

Milk, 2 tablespoons.
Salt, a pinch.

1. Mix flour to a smooth batter gradually with the egg and milk.
 2. Dip fish into flour seasoned with pepper and salt.
 3. Dip fish into batter, using two forks.
 4. Fry in smoking hot fat till a light brown on both sides.
- Time, about 6 or 7 minutes.

POTATO CHIPS.

1. Cut some raw potatoes into slices, then into strips.
2. Dry them in a cloth.
3. Fry in hot fat for about ten minutes.
4. Drain well, sprinkle with salt.

SCONE LOAF.

Flour, 1 lb.

Sugar, 1 teaspoon.

Salt, 1 teaspoon.

Egg, 1.

Milk, 1 cup.

Baking Powder, 4 teaspoons.

1. Mix all dry ingredients together.
 2. Make a well in centre.
 3. Break in the egg, pour in milk.
 4. Mix quickly into a stiff batter.
 5. Bake in a small greased cake-tin in a moderate oven about 30 minutes.
-

LESSON VII.**I. CLEANING A SITTING-ROOM.**

1. Raise blinds and open windows.
2. Cover furniture with dust-sheets; fold table-cover and remove rugs and mats, faded flowers.
3. Clean fireplace and lay the fire.
4. Clean as already directed for linoleum or carpets (page 13).
5. Dust room, clean and replace rugs, etc.

II. CLEANING A BEDROOM.

1. Open windows, strip the bed, and turn mattress.
2. Tidy the wardrobe and washstand.
3. Make the bed.
4. Remove and shake mats, sweep and dust room, toilet table and other furniture.

III. MAKING A BED.

1. See that your hands are clean and your apron also.
2. Shake sheets, blankets, and throw them over chairs.
3. Shake and turn mattress.
4. Spread and tuck in (a) under blanket, (b) under sheet, right side up.
5. Shake pillows and lay them lightly at head.

6. Spread top sheet (wrong side up), and blankets, tucking each in separately. Spread counterpane. Latter may cover pillows, or be folded back. See that all is perfectly smooth.
-

IV. BONE-MAKERS.

The mineral constituents of bone are phosphate of lime, soda, and potash.

Chief bone-making foods are

1. **Water**, which has dissolved in it salts of lime, iron, potash, etc.
2. **Common salt**, which also assists to form blood, aids digestion, and forms muscle.
3. **Fresh vegetables and grains**, which contain potash, soda, etc.
4. **Milk**, which contains potash, lime, phosphorus, soda, etc.

The body requires a much greater proportion of heat-giving food than of any other, and bone-making or mineral food least of all.

V. RULES FOR PASTRY.

1. Use good ingredients.
2. Pastry must be kept cool.
3. It must be handled as little as possible.
4. In short pastry the lard or dripping must be rubbed in with the tips of the fingers.
5. A knife must be used for mixing.
6. Pastry must be baked in a hot oven; if it contains baking powder it must be baked at once.

RECIPES.

SHORT PASTRY.

Flour, 6 ozs.

Salt, a pinch.

Baking Powder, $\frac{1}{4}$ teaspoon.

Dripping, 3 ozs.

Water, to mix.

1. Rub the dripping into the flour with the fingers.
2. Add salt and baking powder.
3. Mix to a stiff paste with water.
4. Roll out and use as required.

CORNISH PASTIE.Short pastry, $\frac{1}{4}$ lb.

Salt and pepper, to taste.

Cooked or raw meat, 1 teacup.

Gravy or water, 1 tablespoon.

Cooked or raw potato, 1 teacup.

1. Cut meat and potato into small pieces.
2. Mix altogether on a plate, add seasoning and gravy.
3. Roll out pastry, cut into a round with a small plate.
4. Roll again oblong in shape, place meat mixture down centre.
5. Close edges to form a ridge on the top, prick with a fork.
6. Bake in a hot oven $\frac{3}{4}$ hour if using raw meat, 20 minutes if using cooked meat.

APPLE PIE.

Pastry, 6 ozs.

Water.

Apples, several.

Sugar.

1. Peel, core, and slice apples to half-fill a pie-dish.
2. Put in sugar and water.
3. Add the rest of the apples.
4. Place a strip of pastry round edge of dish.
5. Damp it, and then cover with a lid of paste.
6. Press edges together and mark neatly.
7. Bake in a hot oven till pastry is brown and fruit cooked (about $\frac{3}{4}$ hour).

LESSON VIII.**I. CARE AND CLEANING OF CLOTHING.****1. General Rules.**

- (a) Prevention is better than cure.
- (b) Keep look-out for stains, tears, etc.
- (c) Put away clean and dry.
- (d) Buy only good material.
- (e) Learn correct mode of folding.

2. Care of Outer Garments.

- (a) Protect clothes at meal times and while doing dirty work.
- (b) Shake, brush, and mend after use.
- (c) Hang up in wardrobe by coat-hangers or loops.

- (d) Clean and press at short intervals.
- (e) Change or protect outdoor clothes on returning indoors.
- (f) Place moth balls with stored clothing.

3. Care of Underclothing.

- (a) Change, mend, and wash at regular and frequent intervals.
- (b) Darn or patch thin places.
- (c) Air day-clothes during the night.

4. Boots and shoes.

- (a) Buy the best you can afford. Cheap boots are not economical.
- (b) After wearing, first air, then stuff with paper.
- (c) Dry wet boots in sun, or hang up in dry air.
- (d) Soften hard leather with grease or vaseline.

How to clean.

- (a) Remove dried mud with sharp stick and a stiff brush.
- (b) Use very little nugget polish or blacking.
- (c) Polish with soft brush and velvet pad.
- (d) Use separate brush, etc., for tan boots.

Note.—Leather is used for making boots because it is pliable, waterproof, and warm.

II. SOUP AS A FOOD.

1. Qualities.

- (a) Light and easy to digest.
- (b) Nourishing.
- (c) Stimulating and warming.
- (d) Economical.
- (e) May contain any desired ingredient.
- (f) May be of any desired strength.

2. **Kinds.**

- (a) **Clear** soups are made by clarifying good brown stock, and are named according to the flavouring added.
- (b) **Broths** are the unclarified liquor in which chicken, veal, mutton, etc., have been cooked with vegetables, barley, etc.
- (c) **Thick** soups can be made from either fish, meat, or vegetables, and are thickened by the addition of flour, cornflour, sago, etc., such as ox-tail soup.
- (d) **Purées** are soups thickened by rubbing the ingredients through a sieve and serving them in the liquid, such as lentil, pea, or potato soup.

3. **Notes.**

- (a) If other food is to follow have a clear soup, as it is very light.
- (b) A thick soup may be made the principal part of a meal.
- (c) Poor stock may be strengthened by the addition of milk, vegetables, or lentils.

III. **STOCK.**

- 1. **Definition.** Stock is the water in which meat has been cooked or bones have simmered for several hours. It is the foundation of all soups, sauces, and gravies.

2. **Kinds.**

- (a) **Brown stock**, made principally from shin of beef.
- (b) **White stock**, made principally from white meat, such as veal, rabbit, chicken, or mutton.
- (c) **Fish stock**, made from fish bones and trimmings.
- (d) **General stock**, made from scraps of meat, bones and vegetables.

3. Rules for making stock. The object is to extract flavour and nutriment from the foods used.

- (a) Break up the bones so that the gelatine will be extracted.
- (b) Cut meat up small to allow the juices to be drawn out.
- (c) Cover with cold water. Add 1 teaspoonful salt, and bring slowly to the boil.
- (d) Skim carefully. Add 1 onion stuck with a few cloves, carrot, stick of celery, herbs, peppercorns.
- (e) Simmer gently 6 to 8 hours.
- (f) Strain into an earthenware basin and keep uncovered.
- (g) Remove fat before using.
- (h) In hot weather boil up every day.

RECIPES.

LENTIL SOUP.

Lentils, 2 teacups.

Onion, 1.

Carrot, 1.

Celery, 2 sticks.

Stock or water, 2 pints.

Pepper and salt, to taste.

Beef dripping, 1 teaspoon.

1. Wash the lentils and put them into a saucepan with the sliced vegetables, seasoning, and stock.
2. Simmer till tender.
3. Rub through a colander and return to saucepan.
4. Make very hot, add dripping, and serve.

FISH CAKES.

Cooked fish, 1 teacup.

Mashed potato, 1 teacup.

Chopped parsley or anchovy sauce, to taste.

Egg or white sauce, 1 tablespoon.

Salt and pepper, to taste.

1. Flake the fish well.
2. Put all the dry ingredients into the basin.
3. Bind all together with the sauce.
4. Turn on to floured board and cut into equal pieces.
5. Form each piece into a flat cake with floured hands.
6. Fry in smoking hot fat a nice brown.

MEAT CAKES.

Any kind of cooked meat cut small or minced, 1 breakfast cup.
Mashed potato or soaked crusts of bread, 1 breakfast cup.
Gravy or stock to bind. Nutmeg, salt, pepper, to season.

1. Soak crusts in water, strain through colander, mash with a fork.
2. Mix all ingredients together, add seasoning.
3. Shape into flat cakes on a floured board.
4. Dip in batter and fry a nice brown.

CURRY AND RICE.

Cold meat cut into dice, 1 breakfast cup.
Stock, 1 teacup. Flour, 1 dessertspoon.
Apple, one-half. Dripping, 1 dessertspoon.
Onion, 1 small. Salt.
Curry powder, $\frac{1}{2}$ teaspoon.

1. Peel the apple and onion, and chop them up finely.
2. Fry in the dripping a golden brown.
3. Stir in the curry powder and flour and fry a little.
4. Add the stock, and stir the mixture till it boils.
5. Add salt, and let it boil gently for 10 minutes.
6. Put in the meat, let all simmer gently for one hour or longer.
7. Dish up nicely, with a border of rice round the dish.

To Boil Rice.

1. Wash 1 teacup of rice in cold water.
2. Cook in plenty of boiling salted water 10 to 15 minutes.
3. Test a grain of rice between the fingers; if soft the grain is cooked.
4. Strain through a colander, cover with a dry cloth.

LESSON IX.**I. ARRANGEMENT OF WEEKLY WORK.**

Order and method are great savers of time, labour and money. Arrange your plan of household work at least a week in advance. For list of daily tasks see page 24. Every housekeeper will arrange her weekly duties to suit the requirements

or convenience of her own household. The following is a suggested arrangement:—

Monday—Brush and put away Sunday clothes.

Wash, dry, and fold clothes.

Tuesday—Damp, mangle, iron, air clothes.

Order groceries, etc.

Remove refuse.

Wednesday—Go shopping or visiting and pay accounts.

Thursday—Darning and mending.

Friday—Clean bedrooms and windows. Tidy yard.

Saturday—Clean other rooms and passages. Flush sink.

Bake extra supplies cake and pastry.
Prepare for Monday's wash.

II. EGGS AS FOOD.

1. Composition. (See diagrams page 122.)

(a) The **white** by itself contains 13% albumen, a trace of fat and mineral, and over 86% water. As stated on page 6, albumen is a compound of carbon, oxygen, hydrogen, nitrogen, and sulphur.

(b) The **yolk** contains 16% albumen, 33% fat, a little mineral, and nearly 50% water. The yolk is thus much richer than the white. The yellow colour is due to the sulphur and fat.

(c) The **whole egg** consists of 14·8% albumen, 10·5% fat, 1% mineral, and 73·7% water.

(d) The shell is composed mainly of carbonate of lime.

2. Food value.

(a) Equal to that of same weight of meat.

(b) Like milk, a complete food.

(c) Containing no starch, should be eaten with carbonaceous foods.

- (d) Combined with milk, wine, or brandy form valuable invalid food.
- (e) Least digestible when hard-boiled or fried in fat, owing to coagulation of albumen.

3. Uses of eggs in cookery.

- (a) To give increased nutriment, richness of colour and flavour to foods.
- (b) To lighten mixtures by enclosing air in them.
- (c) For binding mixtures (croquettes, rissoles, etc.).
- (d) For coating foods before frying.
- (e) To clear soups and jellies (use whites and shells).

RECIPES.

SCRAMBLED EGG ON TOAST.

Slice of hot buttered toast.	Butter, 1 teaspoon.
Egg, 1.	Pepper and salt, to taste.
Milk, 1 dessertspoon.	

1. Beat the egg a little, then add milk and seasoning.
2. Melt the butter in saucepan.
3. Add egg mixture.
4. Cook gently till set and creamy, stirring all the time.
5. Pile on the toast and serve at once.

CURRIED EGGS.

Eggs (hard-boiled), 2.	Small onion, $\frac{1}{2}$.
Stock, 1 teacup.	Apple, $\frac{1}{4}$.
Flour, 1 heaped dessertspoon.	Salt, $\frac{1}{4}$ teaspoon.
Curry powder, $\frac{1}{2}$ teaspoon.	Dripping, 1 teaspoon.

1. Boil the eggs for twelve minutes.
2. Chop the apple and onion finely, and fry them in the dripping without browning.
3. Add flour and curry powder, then the stock.
4. Stir till the sauce boils.
5. Simmer for ten minutes.
6. Cut the eggs in half and add to the sauce.
7. Dish up with a border of boiled rice.

SPONGE SANDWICH.

Egg, 1.

Sugar, 2 ozs.

Flour, 2 ozs.

Baking powder, 1 small teaspoon.

Cold water, 1 tablespoon.

1. Beat the egg till light and thick.
2. Add the sugar and beat well.
3. Then the water.
4. Lastly stir in the flour and baking powder quickly.
5. Put into two greased and floured sandwich tins.
6. Bake in a moderate oven about 8 minutes.

LESSON X.**I. CARE OF DISH-CLOTHS AND TEA-TOWELS.**

1. After use, wash in hot soapy water.
2. Rinse thoroughly, wring out, and dry.
3. Place ready for immediate use.
4. Boil thoroughly once a week.

II. CARE OF SCRUBBING-BRUSHES.

1. Rinse in clean cold water.
2. Disinfect, if necessary.
3. Shake well.
4. Either hang up or stand in sun to dry.

III. TO REMOVE STAINS.

1. **Fruit stains in linen.**—(a) Rub both sides with soap. (b) Tie up pearl ash in touch with the stain. (c) Soak in hot water or boil. (d) Expose to air and sun.
2. **Candle grease from clothing.**—(a) Scrape with blunt knife. (b) Use hot iron and blotting-paper till stain disappears.
3. **Grease or oil from clothing.**—(a) Rub with weak ammonia and hot water, turpentine, petrol, or benzine. (b) If on white cotton, wash and boil.
4. **Ink on linen.**—(a) Rub with acid on a flannel. (b) Then wash thoroughly.
5. **Paint on clothing.**—(a) Wet and then rub with a few drops of ammonia and turpentine.

6. **Tar on clothing.**—(a) Scrape off with a blunt knife. (b) Rub with paraffin.
7. **Paint or tar from hands.**—(a) Rub with butter or lard, and then wash with soap and water; or, (b) cover hands with soap before handling paint or tar.
8. **Mildew.**—(a) Dip the mildewed part in cold water, and rub over thickly with soap.
(b) Cover soaped part with scraped chalk.
(c) Place on the grass to bleach, and repeat the method till the spots disappear.
If this method fails try a solution of chloride of lime, or spread the mildew with buttermilk, place on the grass, and add more as the buttermilk dries.

IV. FISH.

1. Composition and structure.

- (a) The composition varies with the kind of fish. The average composition is 15.1% protein, 4.4% fat, .9% mineral matter, 61.9% water, and 17.7% waste. For composition of meat see page 22.
- (b) Flesh is made up of bundles of fibres similar to those of meat, but having very little connective tissue. Hence fish falls to pieces quickly in cooking.

2. Food Value.

- (a) Similar to that of lean meat, though poorer in nitrogenous matter and fat.
- (b) Less satisfying than meat but useful as a change of food.
- (c) Suitable for invalids.
- (d) Oily fish the most nutritious.
- (e) Must be eaten fresh, owing to danger of ptomaine poisoning.

3. How to choose Fish. (See page 129.)

4. Preparation for cooking.

Cleaning—

- (a) Scrape off all scales and cut off fins.
- (b) Clean thoroughly, wash well, and dry.

Skinning—

- (a) Wash in cold water.
- (b) Cut across tail with sharp knife.
- (c) Loosen skin with the fingers.
- (d) Take a cloth and draw skin off towards head.

Filleting—

- (a) Cut down backbone with sharp knife.
- (b) Slip knife under flesh, keeping close to bone till fins are reached.
- (c) Cut fillet off each side.
- (d) Turn over and cut off two more fillets.

5. Methods of cooking fish.—The albumen in fish, as in meat and white of egg, coagulates in boiling water. The various ways of cooking are:—

- (a) Boiling. A wasteful method, as much of the goodness escapes into the water.
- (b) Steaming. The most nourishing and digestible way, *e.g.*, steamed flounder or sole.
- (c) Frying. Fillets may be fried either in egg and breadcrumbs, or in batter.
- (d) Baking. Used for stuffed fish of any kind.
- (e) Grilling. Used for smoked haddock or fresh herrings.

Average time for cooking is 10 mins. to each lb. and 10 mins. over.

RECIPES.

TO BOIL FISH.

Time—10 minutes to every lb. and 10 minutes over.

1. Put a saucepan half full of water on to boil, add 1 tea-spoon salt, and a few drops of vinegar.

2. Tie fish in a piece of muslin and plunge into boiling water. Let it simmer gently.
3. When cooked take up and drain.
4. Put on to a hot dish and cover with a suitable sauce.

SAUCES.

White Sauce (see page 20) forms the foundation of other sauces, which may be made by the addition of various ingredients. Thus to make

Parsley Sauce, add 1 dessertspoon of finely chopped parsley.

Egg Sauce, add 1 chopped hard-boiled egg to half pint white sauce.

Onion Sauce, add 1 cooked chopped onion to half pint white sauce.

Caper Sauce, add a teaspoon or more chopped capers.

Anchovy Sauce, add 1 dessertspoon anchovy essence to half pint sauce. Stir well.

ROCK CAKES.

Flour, $\frac{1}{2}$ lb.

Sugar, 1 oz.

Lard, butter, or dripping, $1\frac{1}{2}$ ozs.

Currants, 1 oz.

Egg, 1.

Candied peel, 1 oz.

Baking powder, $\frac{1}{2}$ teaspoon.

Milk, $\frac{1}{2}$ teacup (about).

1. Rub the fat into the flour.
2. Add other dry ingredients.
3. Mix to a stiff paste with the egg beaten up with the milk.
4. Place in rocky heaps on a cold greased tin.
5. Bake in a moderate oven about 15 minutes.

LESSON XI.

I. CARE OF WOOD IN THE HOUSE.

1. General Rules.

- (a) Never permit woodwork to get very dirty.
- (b) Open and shut doors by the handles.
- (c) Use clean brushes, dusters, etc., for cleaning.

2. Plain Wood.

- (a) Wash with hot water.
- (b) Remove ink stains with spirits of salts.
- (c) Rub lightly with sandsoap.

- (d) Scrub the way of the grain.
- (e) Rinse clean and let dry.

3. Varnished Wood.

- (a) Dust carefully.
- (b) Wash with warm water and a few drops of paraffin.
- (c) Dry and polish.

4. Painted Wood.

- (a) Dust often, and wash gently with warm water and soap if necessary, changing water frequently.
- (b) Rinse clean, and dry.
- (c) If greasy, smear with paste of whiting and water.
- (d) Rub briskly, wash clean, and dry.

5. Polished or Oiled Wood.

- (a) Dust often, polish with a soft cloth dipped in linseed oil or o-cedar oil. If very dirty wash with lukewarm water and vinegar.
- (b) Dry carefully, then oil.
- (c) To remove stains rub with vinegar and then spirits of salts.
- (d) Re-polish as below.

6. Polishing furniture.

- (a) Rub polish a little at a time well in with a soft cloth.
- (b) Polish with soft cloth, rubbing the way of the grain.

II. CLEANING OF BRUSHES.

1. **Handles and backs.** Clean as polished wood.

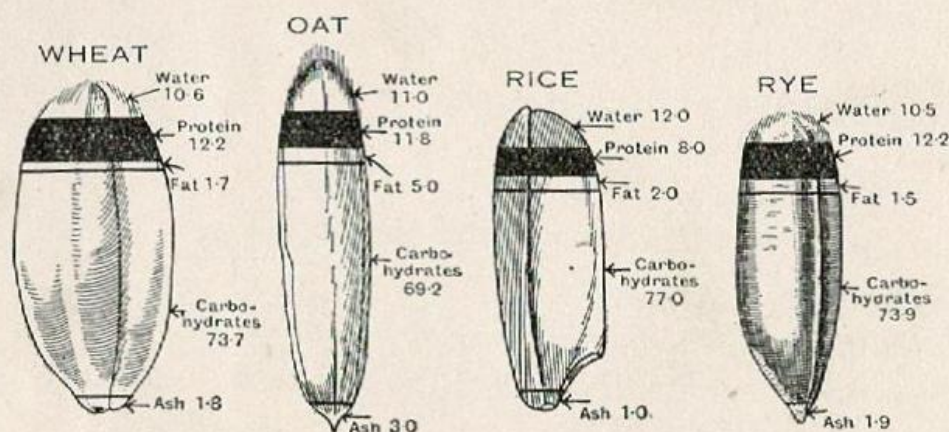
2. Soft brushes.

- (a) Wash frequently in warm water with a little soda, soap, or borax and soap.
- (b) Strike surface of water with bristles till clean.

- (c) Rinse first in warm, then in cold water.
 (d) Shake, then hang or stand out to dry.
3. **Brooms and switches.**
 (a) Wash as above, rinsing in cold salt water.
 (b) Soak 10 or 12 hrs. in salt and water to stiffen bristles.
4. **Hair or toilet brushes.** (See page 98.)

III. CEREALS.

1. **Definition.** Cereals or grains are grasses, the seeds of which are prepared for foods. The chief kinds are wheat, oats, barley, rice, maize, and rye. They are the most important vegetable foods.



Food value of grains.

2. **Composition.** Cereals contain all food constituents, but not in the right proportion for man's needs. Their important constituents are starch, protein, fat, and mineral matter. In addition they contain woody fibre or cellulose, and water.

Table of food values.

		Protein.	Fat.	Starch.	Mineral Matter.	Water.
Wheat	..	12.2	1.7	73.7	1.8	10.6
Oats	..	11.8	5.0	69.2	3.0	11.0
Rye	..	12.2	1.5	73.9	1.9	10.5
Rice	..	8.0	2.0	77.0	1.0	12.0

- (a) Note that cereals are rich in starch.
- (b) Should be eaten with other foods richer in fats and proteids.
- (c) Wheat is the richest cereal food.
- (d) First two above are heat-givers and flesh-formers, the last two chiefly heat-givers.

3. Structure.

- (a) An outer husk, removed by threshing.
- (b) Coats of bran, rich in mineral matter.
- (c) The germ surrounded by its food supply, starch and proteid, which may be ground into flour.

4. Cooking of Cereals.

- (a) Either boiled or steamed.
- (b) Allow plenty of water to swell the starch grains.
- (c) Allow plenty of time to burst the starch cells.
- (d) Add salt (1 teaspoonful to 1 pint) to water to draw out the flavour.

A. Wheat.

1. Composition.

- (a) Bran, starch, gluten, mineral salts, fat.
- (b) Gluten is a tough, elastic, sticky substance. It is the nitrogenous constituent of wheat.

2. Structure.

- (a) Outer husk.
- (b) Inner skin of bran, rich in gluten.
- (c) Kernel, chiefly starch, which grinds into white flour.

3. Wheat foods.

- (a) Macaroni, vermicelli, semolina, and spaghetti are manufactured from the flour of hard Italian wheat, rich in gluten.
- (b) Macaroni is rich in gluten and starch, and when combined with proteid foods such as milk, eggs, or cheese, makes a good substitute for meat.

B. Oats. Similar to wheat in structure and food value, but owing to the soft nature of the gluten oat flour cannot be used for making bread.

Usually used as breakfast foods, such as oatmeal or rolled oats.

C. Barley. Used chiefly for making malt for beer and whisky. In the form of pearl barley it is also used for making broths and barley water.

D. Rye makes a dark heavy kind of bread, used by the peasants of northern Europe.

E. Maize or Indian Corn, a very nutritious grain containing more fat than any other cereal. Not a favourite food in New Zealand except in the form of cornflour.

F. Rice.

- (a) Has lowest food value being mainly starch.
- (b) Requires to be eaten with other foods rich in fat and proteids, *e.g.*, lentils, meat, milk, eggs.
- (c) Used with meat as a vegetable, or as a pudding with fruit, golden syrup, or jam.
- (d) Should be cooked very slowly to allow grains to burst and absorb the milk.
- (e) Chief food of one-third of the human race.
- (f) Used in hot countries where starch digests more easily than fat.

RECIPES.

PORRIDGE.

Oatmeal, 1 tablespoon. Water, $\frac{1}{2}$ pint.
Salt, $\frac{1}{2}$ teaspoon.

1. Put water on to boil in a saucepan.
2. Mix oatmeal to a smooth paste with 1 tablespoon of cold water, add salt.
3. Pour it into the boiling water.
4. Stir till it boils.
5. Put lid on saucepan, boil gently for 1 hour.
6. Serve with sugar and milk.

OATMEAL CAKES.

Oatmeal, 2 breakfast cups.
Flour, 1 breakfast cup.
Dripping, 2 tablespoons.
Salt, 1 level teaspoon.

C. soda, 1 level teaspoon.
Boiling water, $\frac{3}{4}$ breakfast cup
(about).

1. Sift all the dry ingredients together.
2. Pour boiling water on to dripping.
3. Mix this with the flour to a stiff dough.
4. Roll out very thin, cut into squares, then into triangles.
5. Bake in a hot oven.

OATMEAL BISCUITS.

Flour, 3 ozs.
Oatmeal, 3 ozs.
Butter or dripping, 2 ozs.
Soda, a pinch.
Ginger, $\frac{1}{4}$ teaspoon.

Cinnamon, $\frac{1}{4}$ teaspoon.
Salt, a pinch.
Sugar, 2 ozs.
Milk, 1 tablespoon.

1. Mix the oatmeal and flour, rub in the dripping.
2. Add the other dry ingredients.
3. Mix to a stiff paste with the water.
4. Flour the board and roll out the dough thinly.
5. Cut into biscuits.
6. Bake 15 minutes in a moderate oven.

CORNFLOUR MOULD.

Milk, $\frac{1}{2}$ pint.
Cornflour, 1 dessertspoon.

Sugar, 1 teaspoon.

1. Put half the milk into saucepan and bring to the boil.
2. Mix the cornflour with the rest of the milk.
3. Stir it into the hot milk, and add the sugar.
4. Cook for a few minutes, stirring all the time.

LESSON XII.**I. CARE OF MEAT SAFE.**

- (a) Hang or build in cool, dry, airy place.
- (b) Keep carefully closed and fly-proof.
- (c) Remove stale or tainted food at once.
- (d) Wash out every other day with hot soapy water.
- (e) Scrub once a week, including hooks and shelves.

II. STORING OF FOODS.

- (a) Keep in cupboards or in pantry that is clean, cool, dry, and well ventilated.
 - (b) Store dry foods in jars, tins, bottles, or bins that are plainly labelled.
 - (c) Have a place for everything, and keep everything in its place.
 - (d) Keep meat, butter, milk, etc., under gauze or muslin covers.
 - (e) Separate butter and milk from strong smelling substances.
 - (f) Store jams, pickles, and sauces in driest and coolest corner.
 - (g) Store fruit and vegetables in cool dark place by themselves.
-

III. CHEESE.

Cheese is made from the casein and fat of milk, drained, salted, and pressed.

1. Food value.

- (a) Nearly 30% casein, 29% fat, over 2% sugar, $3\frac{1}{2}\%$ mineral matter, and $35\frac{1}{2}\%$ water.
- (b) A strong food: 1 lb. cheese = 2 lbs. meat.

2. As a food.

- (a) Unsuitable for young children and delicate people.
- (b) Good and economical for working man.
- (c) Lacks starch, and should therefore be eaten with starchy foods such as bread, rice, and macaroni.
- (d) Becomes hard to digest only when cooked beyond melting point.

3. Use in cookery.

- (a) Used with eggs and milk to make soufflés and savouries.
- (b) When added to macaroni, omelet, or vegetables it becomes a substitute for meat.

RECIPES.**MACARONI CHEESE.**

Macaroni, 2 ozs.	Flour, $\frac{1}{2}$ oz.
Grated cheese, 3 ozs.	Salt and pepper, to taste.
Milk, $\frac{1}{2}$ pint.	Mixed mustard, $\frac{1}{2}$ teaspoon.
Butter, 1 oz.	

1. Cook the macaroni in boiling salted water till tender (about 20 minutes).
2. Strain the water off.
3. Make a sauce with the milk, butter, and flour.
4. Grate the cheese and put half into the sauce, with the macaroni and seasonings.
5. Pour into a pie dish.
6. Sprinkle remainder of cheese over the top.
7. Brown in a hot oven.

CURRIED SAUSAGES.

Sausages, 2.	Apple, $\frac{1}{4}$.
Chopped onion, 1 tablespoon.	Flour, 1 teaspoon.
Curry powder, $\frac{1}{4}$ teaspoon.	Dripping, 1 dessertspoon.
Water, 1 teacup.	Salt.

1. Fry sausages a golden brown in the dripping.
2. Lift them on to a plate, then fry onion and apple.
3. Add flour and curry powder, and fry for a minute.
4. Add water, stir the sauce till it boils.
5. Put in the sausages.
6. Simmer gently for twenty minutes.
7. Dish up on a hot dish, place a border of boiled rice round.

LESSON XIII.**I. RULES FOR HEALTH OF PERSON.****1. Food.**

- (a) Must be suited to age, sex, season or climate, and occupation.
- (b) Must be varied, sufficient, but not too much in amount, and well cooked.
- (c) Must be taken at meal times only.
- (d) Must be eaten slowly and masticated well.
- (e) Avoid too much cold drink at meals.
- (f) Avoid the use of alcohol.

Note.—The common house fly is a very deadly carrier of filth and disease germs. Not only should constant war be waged against it, but all food should be carefully guarded from contact with it.

2. Clothing.

- (a) Must be clean, dry, and warm.
- (b) Must be loose enough to give freedom to bodily organs and limbs.
- (c) Change at once on returning home wet.

3. Person.

- (a) Wash every day, drying with rough towel.
- (b) Have warm bath frequently.
- (c) Bathe and swim when convenient.
- (d) Beware of straining the eyes; when sore bathe with solution of boracic acid.
- (e) Wash ears, avoiding injury to drums.
- (f) Take regular and abundant exercise.
- (g) Take regular and sufficient rest and sleep.
- (h) Clean teeth after meals and visit dentist periodically.
- (i) Cut nails every week and brush them often.
- (j) Comb and brush hair well twice a day, and wash occasionally with warm water and soap.
- (k) Cultivate habits that promote health.

4. Dwellings.

- (a) Must be clean, dry, airy, sunny, and roomy.
- (b) Keep surroundings sweet and wholesome.

II. RAISING AGENTS.—EFFECT OF BAKING POWDER, BICARBONATE OF SODA, AND CREAM OF TARTAR.

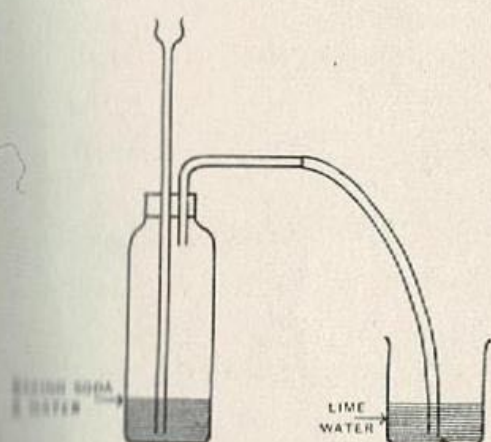
1. **Composition.** Baking powder is a mixture either of cream of tartar or tartaric acid and bicarbonate of soda, with flour. It is used

in cookery for raising dough, and has an effect similar to that of yeast in bread-making. (See page 109.)

2. **Effect.** Each of the three substances named produces carbonic acid gas under the influence of heat and moisture. The gluten in dough made from wheat flour entangles the particles of this gas, and prevents their escape, with the effect that the bread, cakes, or scones expand or rise, and become spongy and light.

Oat and maize flour do not make good bread, as the gluten cannot imprison the carbonic acid gas, and the bread is close and heavy.

3. Experiments.



- (a) Pour a little water upon some baking powder in a small bottle arranged so that when effervescence takes place the gas passes into lime water. The lime water turns milky, showing that the gas is carbonic acid.

- (b) Also heat a little bicarbonate of soda in a test tube arranged so that the gas produced passes into lime water. A similar result is shown.
- (c) Make two small cakes of dough, adding a pinch of soda to the flour for one cake only. Bake in same oven. Note.—The dough without soda cooks heavy and close, the other light and spongy.

RECIPES.**SODA LOAF.**

Flour, 2 breakfast cups.	Cream of tartar, 1 teaspoon.
Milk, 1 breakfast cup.	Sugar, 1 teaspoon.
Soda, $\frac{1}{2}$ teaspoon.	Salt, $\frac{1}{4}$ teaspoon.

1. Mix all dry ingredients together.
2. Mix with the milk to a rather soft dough.
3. Put mixture into a greased tin.
4. Bake in a hot oven about $\frac{3}{4}$ of an hour.

WHEATMEAL LOAF.

Wheatmeal, 2 cups.	Cream of tartar, 2 teaspoons.
Flour, 1 cup.	Butter, 1 teaspoon.
Salt, 1 teaspoon.	Golden syrup, 1 dessertspoon.
Soda, 1 teaspoon.	Milk, about 3 teacups.

1. Rub butter into flour.
2. Add all the other dry ingredients.
3. Mix into a nice soft dough with the milk and golden syrup.
4. Put into a greased tin.
5. Bake in a hot oven about 1 hour.

PIKELETS.

Flour, 4 ozs.	Soda, $\frac{1}{4}$ teaspoon.
Sugar, 1 dessertspoon.	Egg, $\frac{1}{2}$.
Cream of tartar, $\frac{1}{4}$ teaspoon.	Milk, about $\frac{3}{4}$ teacup.

1. Mix all the dry ingredients together.
2. Beat the egg with the milk.
3. Make a hole in the centre of the dry ingredients.
4. Pour in the liquid gradually and mix to a smooth batter.
5. Fry in dessertspoonsful on a greased girdle or frying pan.
6. When bubbles form on the top turn and brown the other side.
7. Butter and serve hot.

FRIED SCONES.

A few currants or sultanas and 1 tablespoon of sugar may be added to the scone dough (see page 16); roll out, cut in small squares, and fry. Serve hot.

LESSON XIV.

I. CARE OF KITCHEN UTENSILS.

1. General hints.

- (a) Put all pots and pans in soak after using.
- (b) Wash greasy or burnt pans with hot soda water.
- (c) Soak rice, potato, or porridge pots in cold water.
- (d) Clean and dry as soon as possible; lids also.

2. Iron utensils, enamelled, and tin ware.

- (a) Scrub inside and out with pot brush, and sandsoap, sapolio, or pan mixture.
- (b) Rinse, dry, and put away uncovered in warm dry place.

3. Copper pan or kettle.

- (a) Rub with salt and vinegar or lemon rind.
- (b) Rinse and dry.

4. Aluminium pans.

- (a) Wash with hot soapy water, using a little sapolio if necessary.
- (b) Rinse and dry with soft cloth.
- (c) Use no soda as it roughens aluminium.

II. FAT AS A FOOD.

- 1. **Composition.** An important carbonaceous food. Contains much carbon and hydrogen, no nitrogen, and little oxygen.

- 2. **Solid fats**—solid at ordinary temperatures but liquid when heated. Found mixed with flesh of animals, also surrounding the heart and kidneys. The kinds of fat used in cooking are:—

- (a) beef suet, the internal fat of the ox—yellow, rich, and soft.
- (b) mutton suet, the kidney fat of the sheep.
For composition of soap see page 85.
- (c) lard, the kidney fat of the pig.
- (d) butter, a fat forming about 4% of milk.
- (e) dripping, fat melted out of any meat.

3. Liquid fats or oils.**Vegetable oils.**

- (a) Olive oil, from fruit of the olive—used for salads.
- (b) Oil from nuts, almond oil.

Fish oil.

- (a) Cod liver oil, made from cod fish.

4. Food Value, etc.

- (a) Fats supply heat and energy. The carbon and the hydrogen in fat combine with the oxygen in the blood and produce heat. Fat gives plumpness to the body, and is a non-conductor of heat. Hence it forms the most important constituent of food in cold regions.
- (b) Fat protects delicate organs of the body.
- (c) Fat is a store or reserve of food that is used when other foods are not to be had.
- (d) Fat acts as a lubricant. Cod liver oil, besides being a food, aids digestion.

III. STEAMING.**1. Definition** (see page 15).

Steaming is cooking food in the vapour arising from boiling water. Moist steaming is done in a steamer over boiling water, and is used for puddings and vegetables. Dry steaming is done in a double boiler, and is sometimes used for custard. It is an economical method of cooking as none of the goodness of the food is lost, and the food is rendered both wholesome and digestible. It is an especially good method of cooking for invalids.

2. Advantages of Steaming.

- (a) Puddings are made lighter and richer.
- (b) The gradual heat renders the food digestible.
- (c) None of the nutritious elements of meat, fish, or vegetables are lost in the water.

- (d) Watery vegetables, such as vegetable marrow and potatoes, waste less and become drier.

3. Disadvantages of Steaming.

- (a) A long time is required to cook the food.
(b) Steamed fish or meat will not produce any gravy.
(c) The water must be kept boiling or the pudding will cease cooking.

4. Steamed Puddings.

Steamed puddings are lighter than boiled puddings. Any pudding that can be boiled

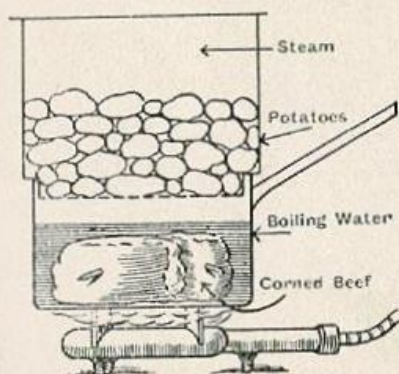


Diagram of steamer.

may also be steamed, but a longer time must be allowed. If no steamer is available puddings may be steamed in a saucepan with a tight-fitting lid, with only sufficient water to come half way up the basin, but the saucepan must be watched, and as the water boils away more must be added. Steam-

ing is a slow method of cooking and necessitates more fuel, but with a little arrangement it can be most economical. Thus, when cooking a boiled pudding, potatoes can be cooked in a steamer above it, or with a three-storey steamer meat, vegetables, and pudding may all be cooked together.

5. Rules for Steaming Puddings.

- (a) The basin must be well greased.
(b) The basin should be filled only three-parts full.
(c) Cover all steamed puddings with buttered paper.

- (d) Keep the lid on all the time.
- (e) The water must only come half way up the basin, and it must be kept boiling all the time.

RECIPES.

STEAMED TREACLE OR JAM PUDDING.

Flour, $\frac{1}{2}$ lb.	Suet (chopd.), or dripping, 2 ozs.
Golden syrup, $\frac{1}{4}$ lb.	Carb. of soda, $\frac{1}{4}$ teaspoon.
Milk, 1 teacup.	

1. Mix all dry ingredients together.
2. Add treacle (or jam) and milk and mix all together.
3. Pour into a greased basin.
4. Cover with a greased paper and steam for an hour and a half.

STEWED CARROTS.

Carrots, 4 small.	Butter, 1 teaspoon.
Parsley (chopped) 1 tablesp.	Salt and pepper, to taste.
Stock, 1 teacup.	Cornflour, 1 teaspoon.

1. Cook the carrots in boiling salted water till tender.
 2. Strain off water, and add the stock.
 3. Add parsley, butter, and seasoning.
 4. Thicken with the cornflour previously mixed with a little cold water.
 5. Put carrots in dish and pour sauce over them.
- See recipe for sauce on page 20.

STEWED STEAK AND POTATO BORDER.

Stewing steak, $\frac{1}{2}$ lb.	Small piece of carrot & turnip.
Flour, $\frac{1}{2}$ oz.	Water, $\frac{1}{2}$ pint.
Dripping, $\frac{1}{2}$ oz.	Seasoning.
Onion, $\frac{1}{2}$.	

1. Cut vegetables into dice.
2. Cut meat into neat pieces and dip into flour.
3. Have dripping smoking hot in stew pan.
4. Fry meat in it, then lift on to plate.
5. Fry vegetables a little.
6. Add water, stir until boiling.
7. Return meat to pan, leave to simmer gently for $1\frac{1}{2}$ hours.
8. Place meat and gravy in centre of dish with border of potato round.

POTATO BORDER.

Mashed potato, 1 b'kfast cup. Milk to bind.
Butter, 1 teaspoon. Pepper and salt.

1. Melt butter in saucepan.
 2. Add potato, milk, and seasoning, and make thoroughly hot.
 3. Turn on to a lightly floured board and form into a roll.
 4. Place round border of dish, mark neatly with a fork.
-

LESSON XV.**I. ECONOMY OF FOOD.**

Economy means making the best use of everything, and never wasting anything. Food may be saved by using up the remains of cooked food in many appetising dishes.

1. Buy cheap articles having a food value as high as or higher than the dear; for example, cheese instead of meat.
2. **Stale Bread** can be used in the following ways—
 - (a) Toast, white or brown crumbs.
 - (b) Cut into dice, fried and served as croûtons with soups.
 - (c) Cut thin slices of bread and butter, make into sweet or savoury sandwiches, dip in batter, and fry as fritters.
 - (d) Stale bread can also be used as the foundation for many puddings.
3. **Stale cake or biscuits** may be made into a cabinet pudding or trifle.
4. White or brown sauce or gravy can be used up in the preparation of rissoles, croquettes, mince, etc.
5. Scraps of meat, poultry, ham, tongue, or fish can be minced, moistened with good gravy, or stock, and made into savoury toasts, kromesgies, etc.

6. All dripping, odd pieces of fat, cooked or uncooked, can be rendered down in a saucepan containing a little water and made into clarified fat. Strained carefully, it can be used for the plainer cakes and pastry, frying, etc.
 7. All bones and trimmings from joints can be put on to boil covered with cold water, a few fresh vegetables added, and made into stock for soups, gravies, etc.
 8. The water in which a joint of fresh meat has been boiled makes a nourishing soup, with the addition of vegetables, barley, etc.
 9. Potatoes can be fried, or used up with meat or fish cakes.
 10. Any cold cooked vegetables may be re-heated in a thick white sauce, or used in salads.
 11. Stale cheese can be grated and used in many savoury dishes.
-

II. THE USE AND ABUSE OF CONDIMENTS.

1. **Definition and Use.** Condiments are substances of distinct and strong flavour used to stimulate appetite
 - (a) by improving the aroma and flavour of food;
 - (b) by increasing the flow of saliva and gastric juice that do the work of digestion.
2. **Kinds.** There are three classes of condiments.
 - (a) Those used with meat.
 - (b) Those used with foods containing sugar.
 - (c) Sauces composed of mixtures of condiments, either dry as curry, or dissolved in weak vinegar or other liquid.

3. Condiments used with meat.

- (a) Salt or sodium chloride, required to keep our blood healthy. The human body contains about $\frac{1}{2}$ lb. To maintain this supply we need to eat about $\frac{1}{4}$ oz. of salt every day. Used for flavouring and for curing foods.
- (b) Vinegar, or weak acetic acid, a by-product of beer-making. Used in sauces, salads, and in making pickles.
- (c) Pepper, the dried ground berry of a tropical tree. The pungent taste is due to a constituent oil. Used as flavouring, and to render root vegetables digestible. Cayenne pepper is the powdered pods of the capsicum shrub, a native of South America.
- (d) Mustard, a yellowish powder, the ground seeds of black and white mustard plants. When mixed with water a pungent taste is produced by a constituent oil. Eaten with all meats except mutton; used medicinally for plasters, etc.
- (e) Curry, a pungent powder made of bruised spices such as cayenne-pepper, coriander seed, ginger, garlic, etc., with turmeric.
- (f) Thyme, sage, parsley, marjoram, chives, etc., either dried or fresh, are popular condiments which many good housewives draw from their own gardens.

4. **Spices.** These are parts of various tropical plants: either a root-stock such as ginger, bark such as cinnamon, berries or seeds like allspice, nutmegs, and caraways, seed shells such as mace (from the nutmeg seeds), or dried flower buds such as cloves.

5. Abuse of Condiments.

- (a) Less necessary to children than to adults.
- (b) More common in hot than in temperate countries.
- (c) Too frequent and excessive use injures the liver and brings on indigestion.

RECIPES.**BREAD AND BUTTER PUDDING.**

Bread, 6 to 8 slices, thinly buttered.

Milk, $\frac{1}{2}$ pint.

Currants or sultanas, 1 oz.

Egg, 1.

Sugar, 1 oz.

1. Butter a pie dish.
 2. Place in the slices of bread and butter.
 3. Sprinkle currants over.
 4. Beat the egg and add to it the sugar and milk.
 5. Pour over the bread.
 6. Bake in a moderate oven about $\frac{1}{2}$ hour.
- Jam or marmalade may be used instead of currants.

BRAWN.

Half a pig's head.

2 Onions, 2 Carrots.

20 peppercorns.

Bunch of herbs.

1. Wash the head thoroughly and put it on in a saucepan of cold water.
2. When it boils skim well and boil gently for about two hours till the flesh leaves the bone.
3. Remove from the pan and take all the meat from the bones and cut into dice.
4. Put the bones into the liquor again, season, and let it boil fast until it will jelly.
5. Rinse a mould or basin with cold water.
6. Put in the meat and strain the liquor over.
7. Leave till the next day.
8. Turn out and garnish with parsley.

BROWN BREADCRUMBS.

1. Put scraps of stale bread or crusts on a tin.
2. Put into a cool oven until quite dry and slightly brown.
3. Put through the mincing machine or crush finely with a bottle or rolling pin.
4. Store in jars and use for coating fish cakes, rissoles, etc.

LESSON XVI.

I. ECONOMY OF FUEL.

1. **To save coal.** When a fire is needed to be kept in but the oven is not required for cooking:
 - (a) Burn cinders as well as all refuse.
 - (b) Put on a tightly twisted bundle of scraps of waste paper.
 - (c) Push in the oven damper, and leave any others about half-way out.
 - (d) Bank up the fire with wet slack or nuts.
 - (e) Use a lasting coal such as Pelawmain.
2. **To economise gas.** (See also page 149.)
 - (a) Arrange the work so that as much cooking as possible may be done while the oven is hot.
 - (b) Use the smallest burner on the top of the stove when cooking soups, stews, or anything requiring gentle heat.
 - (c) Use light enamelled or aluminium saucepans which will conduct heat quickly.
 - (d) Keep all utensils clean and free from soot, which is a non-conductor of heat.
 - (e) Turn off the gas directly it is no longer needed.
3. **To save firewood.**
 - (a) Use perfectly dry wood, and no more than is necessary to light the coal.
 - (b) Collect waste material for use as kindling.

II. CAKE-MAKING.

1. **Hints.**

- (a) A cake must be accurately weighed, according to the recipe, and not put together by rule of thumb.
- (b) It must be mixed lightly and quickly, and put into the oven before the bubbles of gas formed by the baking powder or bicarbonate of soda have time to escape.

Too much mixing after the flour is added makes a heavy cake.

- (c) It must be well baked. This is one of the most difficult parts of cake-making. Cakes require a steady, but not fierce heat. The fire should be made up some little time before the cake is put in the oven, and in such a way that it will last during the first part of the baking at any rate. An experienced cook judges the heat of the oven by feeling it with the hand. Simple tests are given on page 126.

2. Preparation of tins.

Cake tins are prepared in the following ways:—

- (a) Greased and floured for sponge mixtures.
- (b) Greased and papered for pound cakes.
- (c) Patty pans are simply greased.
- (d) Do not grease tins for shortbread or pastry.

3. Rules.

- (a) Before beginning to make a cake see to the oven, and have everything needed ready at hand.
- (b) Use good butter and eggs; good dripping is better than bad butter.
- (c) Fruit cakes should be placed in rather a hot oven at first, in order to set the mixture quickly; otherwise the fruit sinks to the bottom.
- (d) Currants and sultanas should be cleaned with flour; then carefully picked over to remove stalks.
- (e) Until a cake is set do not move it, or it will sink in the middle.
- (f) If a cake is becoming too brown on the top, put a piece of plain paper over it.
- (g) Do not bang the oven door.

- (h) To see if cakes are cooked push a skewer into the middle.
- (i) Turn cakes on to a clean cloth or sieve to allow steam to escape.

RECIPES.

PLAIN CAKE.

Flour, $\frac{1}{2}$ lb.	Sugar, 3 ozs.
Dripping, 3 ozs.	Egg, 1.
Baking powder, $\frac{1}{2}$ teaspoon.	Milk, about a teacup.
Salt, a pinch.	Spice or Essence, to flavour.

1. Weigh all ingredients.
 2. Grease and paper the cake tin.
 3. Rub the dripping into the flour.
 4. Add sugar, baking powder, and beaten egg.
 5. Mix with milk to a soft consistency.
 6. Pour into prepared tin.
 7. Bake in a moderate oven about $\frac{3}{4}$ hour.
- Note.**—For a fruit cake add 3 ozs. of currants, sultanas, or raisins, and 2 ozs. of peel.

QUEEN CAKES.

Flour, 8 ozs.	Milk, $\frac{1}{2}$ teacup.
Sugar, 4 ozs.	Sultanas, 3 ozs.
Butter, 4 ozs.	Soda, $\frac{1}{4}$ teaspoon.
Eggs, 2.	

1. Cream the butter and sugar.
2. Beat up the egg with the milk.
3. Dissolve the soda in some of the milk.
4. Mix all ingredients together.
5. Put into greased patty-pans in a moderate oven.
6. Bake about 15 minutes.

LESSON XVII.

I. HOW TO LAY OR SET THE TABLE FOR DINNER.

1. General hints.

- (a) Allow yourself plenty of time.
- (b) Think of number of places to be set.
- (c) Think of what dishes are to be served.

- (d) Arrange to avoid unnecessary going in and out of the dining-room during the meal.

2. Preparations.

- (a) Collect all things you require.
- (b) See that cutlery, dishes, etc., are clean.
- (c) Fill salt cellars, water jug, mix mustard, etc.
- (d) Heat plates and dishes required.
- (e) Place on trays for carrying.

3. Order of setting the table.

- (a) Lay silence cloth.
- (b) Lay tablecloth, unfolding and spreading evenly without creasing.
- (c) Arrange table centre and flowers, also any mats.
- (d) Next place cruets, water jug, tumblers, etc., required.
- (e) Set knives, forks, and spoons in place, ready for use, with dessert spoons and forks in front of plate.
- (f) Place serviettes.
- (g) If tea is served, arrange cups, saucers, etc., at one end of table.
- (h) Set chairs for each person.

4. Waiting at table.

- (a) Move briskly and quietly.
- (b) Set meat before carver, vegetable dishes at sides.
- (c) Serve while smoking hot.
- (d) Serve and remove dishes from left side.
- (e) Do not fill plates or glasses too full.
- (f) Remove all meat dishes, etc., before serving pudding.
- (g) After the meal, remove all articles on trays.
- (h) Brush crumbs into a tray, re-fold cloth in old creases.

II. MANNERS AT TABLE.

- (a) Attend to the wants of others first.
 - (b) Avoid boisterous speech and laughter.
 - (c) Do not commence till all are served.
 - (d) Eat and drink slowly and quietly.
 - (e) Use forks, spoons, knives, etc., for proper purposes.
 - (f) Avoid spilling or splashing food about.
 - (g) Sit straight without leaning on the table or elbowing neighbours.
 - (h) Raise food to the mouth; do not lower mouth to the food.
 - (i) Cough or sneeze, if necessary, into your handkerchief.
 - (j) Ask for what you need; do not reach for it.
-

III. DIGESTION.

1. Definition.

Digestion is the process by which food is made soluble and passed into the blood so as to form part of the system. The digestive juices, which are contained in the body, contain **ferments**, each acting upon a different class of food. They have the power to split up foods into very simple substances which dissolve easily in liquids, and then pass into the blood stream.

2. The process of digestion.

The teeth reduce the food to a soft pulp, and the saliva flowing from the cheeks and beneath the tongue, helps to soften it still more. The saliva contains a ferment called **ptyalin**, which has the power of changing starch into sugar. The food is then passed slowly down the gullet into the stomach. From this point onwards it is subjected to a continual churning movement, which thoroughly mixes it with the digestive juices, and passes it slowly along on its journey. In the stomach the gastric

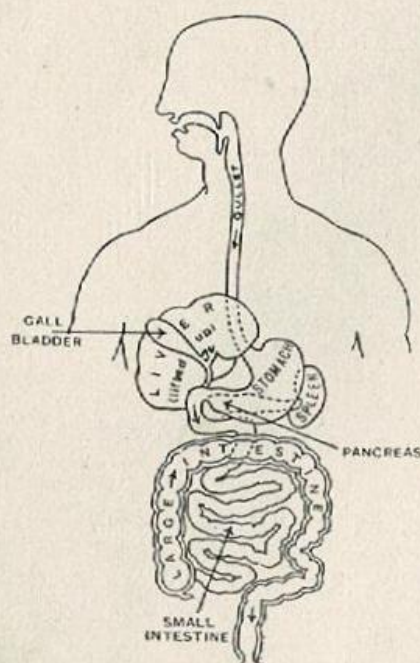


Diagram to illustrate digestion.

juice containing an active principle called **pepsin** changes protein into peptones. On leaving the stomach the food is passed into the small intestine, where the bile and pancreatic juice (secreted by the liver and pancreas respectively) emulsify the fatty foods and act upon any starchy or proteid substance which may not have been digested. The process of digestion is finally completed in the large intestine. The nourishing part of the food is absorbed in the stomach and intestines whence it passes into the blood circulation. The long tube that commences at the mouth and in which digestion is carried on is called the **alimentary canal**. (See Experiments, page 133).

3. Aids to digestion.

- (a) Pleasing flavours stimulate the flow of gastric juice and create appetite; thus soups are useful.
- (b) Dishes nicely cooked and daintily served influence the appetite.
- (c) Masticate thoroughly, so that the food becomes properly mixed with saliva, and less of it will be necessary.
- (d) Eat at regular times and in moderate quantities, and in an upright position so that the digestive organs are not over-taxed.
- (e) Digestions vary, so choose the foods that you can digest well, and avoid those which give you indigestion.
- (f) Meals should never be hurried, but due time allowed for their enjoyment.
- (g) Try to have the surroundings wholesome, pleasant, cheerful, and free from worry.

RECIPES.

STEWED TRIPE.

Tripe, 1 lb.
Onion, 1.
Milk, $\frac{1}{2}$ pint.

Flour, $\frac{1}{2}$ tablespoon.
Pepper and salt.

1. Wash the tripe and remove fat, cut into neat pieces, cover with cold water and cook slowly one hour, then strain off the water.
2. Cover the tripe with the milk, and onion cut in thin slices, add seasoning.
3. Simmer gently $\frac{1}{2}$ hour, thicken with the flour previously mixed with a little cold milk. Dish neatly with small squares of toast.

Note.—A tablespoon of chopped parsley may be added instead of or with the onion. Tripe may be boiled in water till tender, then stewed in gravy.

MASHED POTATOES.

Some cooked potatoes.
A little milk.

Small piece of butter or dripping.
Salt to taste.

1. Mash the potatoes smooth.
2. Add the butter and milk and beat well.

COTTAGE PUDDING.

Flour, 1 b'kfast cup (level).
Sugar, $\frac{1}{2}$ breakfast cup.
Milk, $\frac{1}{2}$ breakfast cup (about).
Butter, 1 tablespoon.

Egg, 1.
Baking powder, 1 teaspoon.
Salt, a pinch.

1. Sift flour, salt, and baking powder together.
2. Add sugar and butter and rub till fine.
3. Beat egg, add milk, and stir lightly into other ingredients.
4. Bake in a buttered pie dish in a moderate oven about $\frac{3}{4}$ hour.

LESSON XVIII.

SICK NURSING.

1. Room.

- (a) Should be large, airy, and sunny as well as perfectly sweet and clean.
- (b) Plainly but neatly furnished so as not to harbour microbes and dust.

- (c) Maintain a steady temperature suited to the patient's illness.

2. Bed.

- (a) Perfectly clean, rather hard than soft, but warm and comfortable.
- (b) Re-make daily, changing clothes twice a week.

3. Patient.

- (a) To receive unremitting attention.
- (b) To be kept quiet but cheerful.
- (c) To be well fed as described below.
- (d) Washed and tidied morning and night.
- (e) Moved from bedroom in day-time as soon as possible.
- (f) Allowed to see visitors when strong enough.

4. Nurse.

- (a) Clean and tidy in person.
- (b) Firm but sympathetic and genial in manner.
- (c) Strictly attentive to patient and to doctor's orders.

5. Medicine.

The prescribed medicine to be given at the right times and in correct quantity, but never wake a patient to take medicine without special orders.

6. Food for the sick.

- (a) The kind is governed by the particular sickness from which the patient is suffering.
- (b) Only what is light, nourishing, and easily digested should be given.
- (c) Give a little and often, though at regular intervals.
- (d) Make simple but dainty little dishes to tempt the appetite.

RECIPES.**GRUEL.**

Oatmeal, 1 dessertspoon. Cold water, 1 tablespoon
Boiling water, $\frac{1}{2}$ pint. Salt, a pinch.

1. Mix the oatmeal smoothly with the cold water.
2. Pour it into the boiling water and stir till it boils.
3. Let it simmer gently for about half an hour.
4. Strain it into a basin.

STEAMED FISH.

Small flounder or filleted fish.

1. Place the fish on a buttered plate.
2. Sprinkle with pepper and salt and cover with a piece of buttered paper.
3. Steam over a saucepan of boiling water.
4. Cook for about 15 minutes.
5. When fish looks white and milky it is done.
6. Serve plain or pour white sauce over.

BAKED CUSTARD.

Milk, $\frac{1}{4}$ pint. Egg, 1.
Sugar, 1 teaspoon. Flavouring.

1. Beat the egg, milk, and sugar together.
2. Pour into a pie dish.
3. Bake very slowly till firm, about $\frac{1}{2}$ hour.

BEEF TEA.

Gravy beef, $\frac{1}{4}$ lb. Salt, to taste.
Water, 1 teacup.

1. Take away all fat and skin from the meat.
2. Cut it up very finely.
3. Put it in a small jar or cup, add water and salt.
4. Let it stand for about twenty minutes.
5. Place the cup in a saucepan with a little boiling water in it.
6. Steam for about twenty minutes.
7. Strain through a coarse strainer, remove fat with clean blotting paper, and serve with strips of toast.

LESSON XIX.

I. INVALID COOKERY.

1. Diet for Invalids.

Doctors as a rule place their patients upon a diet suitable to the case. There are five kinds of diets.

- (a) **Milk diet.**
- (b) **Liquid Diet**, which includes milk, beef tea, broths, beef juice, gruel, cocoa, arrowroot.
- (c) **Soft Diet**, which includes dishes already named as well as poached eggs, junket, jellies, and cereals.
- (d) **Light Diet**, which includes lightly cooked eggs, baked custard, sweetbreads, brains, jellies, steamed fish, baked apples, stewed fruits, junkets.
- (e) **Full Diet**, which includes soups, meat, fish, eggs, vegetables, fruit, cereals, and any light puddings. No food at all difficult of digestion should be allowed.

2. Rules for Invalid Cookery.

- (a) Where there are doctor's orders regarding the food, these must be faithfully carried out.
- (b) The food should be simple and not highly seasoned.
- (c) Serve the food punctually, daintily, a little at a time and often.
- (d) All hot dishes should be really hot, and cold dishes quite cold.
- (e) Try to vary the food as much as possible, letting each dish come as a surprise.
- (f) Do not prepare food in the sick room, or leave uneaten food there.
- (g) Do not worry the patient to eat, but

always have something in readiness, such as soup, jelly, or a cooling drink when asked for.

- (h) The best and freshest ingredients only must be used.
- (i) All utensils, etc., and everything connected with the food must be spotlessly clean.
- (j) If pudding is allowed use no soda, acid, or baking powder.

3. Suitable foods for Invalids.

Mutton is more easily digested than beef, though slightly less nourishing. Sweetbreads and brains are very suitable. Poultry and game are tender, nourishing, and easily digested. Fish is a valuable food. White fish, such as sole or flounder should be selected, as the flesh is quite free from fat. Oily fish, though nourishing, is not so digestible. Oysters are the only shell-fish allowable, and these eaten raw are most nourishing and digestible. Milk, being the only perfect food in liquid form, is of great value. An addition of barley or soda water will in some cases render milk more digestible. Cream is nourishing, and easily made into appetising dishes. Eggs are most digestible eaten raw or very lightly cooked; lightly cooked albumen contains much nourishment. Soups, broths, and beef-tea if well made possess valuable qualities in a very digestible form. Coffee and tea contain very little nourishment, but have a stimulating effect on the nervous system. Cocoa is more of a food than a beverage, and contains considerable nourishment. Green vegetables are wholesome if well cooked, especially spinach. Fruit is wholesome and refreshing. Care should be taken to see that it is ripe and in

perfect condition. Cooling drinks are toast water, barley water, milk and soda water, and lemon juice and water.

RECIPES.

SAGO CUSTARD

Sago, $\frac{1}{2}$ oz.
Milk, $\frac{1}{2}$ pint.

Sugar, $\frac{1}{2}$ oz.
Egg, 1.

1. Wash the sago and sprinkle into boiling milk.
 2. Stir till the sago looks clear.
 3. Take off the fire and add the beaten egg.
 4. Pour mixture into a greased pie dish.
 5. Bake about twenty minutes in a moderately hot oven.
- Use 1 oz. of sago if no egg is used.

STEWED PRUNES (OR FIGS.)

Prunes, 1 teacup.
Water, 1 teacup.

Sugar, 1 dessertspoon.
Lemon rind, a strip.

1. Soak the prunes in water beforehand.
2. Boil the sugar, water, and lemon rind.
3. Add the prunes, cook gently till soft, for about twenty minutes.

BAKED APPLES.

Apples, 6.
Sugar, 1 teacup.

Water, 1 teacup.

1. Core the apples.
2. Pour over them the sugar and water.
3. Bake in a moderate oven till soft.

LESSON XX.

I. ECONOMY OF CLEANING MATERIAL.

(a) Make your own cleaning mixtures where materials are cheap and making simple.

For example—

- (1) **To make Linoleum or Furniture Polish—**
Take $\frac{1}{4}$ lb. beeswax, 1 oz. curd soap, 1 pt. turps, 1 pt. boiled water. Pare the

beeswax and soap very fine, pour the turpentine over it and let it stand all night, or till quite soft and dissolved. Then add the water, cold. Beat well till it becomes white and creamy, then bottle. Apply with flannel, and rub up with an old silk duster.

- (2) **To make a Pan Mixture**—Mix equal quantities of sifted whiting, soap powder, and sand thoroughly together.
- (b) Convert worn-out garments into dusters and cleaning cloths.
 - (c) Cut bars of soap into cakes and dry before using.
 - (d) Save scraps of soap for washing day.
 - (e) Keep soap, sandsoap, sapolio, etc., dry when not in use.
 - (f) Use clean newspapers for removal of thick grease, or for standing pots and pans on.
 - (g) Buy only the best cleaning materials in the market, and use with care.
-

II. RULES FOR MAKING HOME-MADE SWEETS.

1. All sweets must be daintily handled, nicely flavoured, and of delicate colouring.
2. A little cream of tartar added when boiling sugar will prevent its graining.
3. Toffee, when cold, must be either wrapped in grease-proof paper or placed in air-tight tins.

RECIPES.

FRUIT TOFFEE.

Sugar, 1 breakfast cup. Vinegar, 1 teaspoon.
Cold water, $\frac{1}{2}$ breakfast cup. Any kind fruit cut small.

1. Boil sugar, water and vinegar till the mixture thickens.
2. When a light brown colour test a drop in a cup of cold water; it should form a crisp ball.
3. Pour into a greased tin prepared with cut up dates, figs, and almonds.

EVERTON TOFFEE.Butter, $\frac{1}{4}$ lb.White sugar, $\frac{1}{2}$ lb.Golden syrup, $\frac{1}{4}$ lb.

1. Stir and boil up.
2. Boil without stirring until a little tried in water snaps.
3. Pour into a buttered dish.
4. Cut up when cold.

COCO-NUT ICE.

Sugar, 2 large b'kfast cups.

Butter, $2\frac{1}{2}$ ozs.

Milk, 1 large b'kfast cup.

Desiccated Coco-nut, 3 tablesp.

1. Put all ingredients except coco-nut into a saucepan.
2. Boil until when a little is dropped in cold water it can be rolled into a ball.
3. Add coco-nut, beat off the fire till rather thick.
4. Pour it into a greased dish.
5. Cut up when cold.

ICED DATES.

Dates (stoned).

Sufficient icing sugar to make
into a stiff paste.

Water, 1 tablespoon.

1. Beat mixture well, stone the dates, and fill the centres with the icing.
 2. Half the mixture may be coloured pink with a little cochineal.
-

COURSE IN LAUNDRY WORK

LESSON I.

I. WATER.

1. **Composition**= H_2O , that is, two atoms of hydrogen to one of oxygen.

Soft water. Pure or nearly pure, as rain, snow, or ice water, and spring or well water in granite or slate country.

Test of soft water. Soft to touch and lathers easily.

Hard water contains dissolved mineral matter such as lime; obtained from springs and wells in limestone or chalk country.

Test of hard water. Harshness to touch, and curdling instead of lathering with soap.

2. **Properties.** Colourless, tasteless liquid. Universally used as cleanser owing to its power of dissolving many substances, and loosening and carrying away dirt.

3. **Soft water economical for washing.**

(c) Does not discolour clothes.

(b) Less rubbing necessary, hence prolongs life of the clothes.

(c) Saves soap or soda.

(d) Saves time and labour.

4. **How to soften hard water.** Two kinds of hard water: temporarily hard, and permanently hard. Former may be softened by

(a) **Boiling**, which drives off carbonic acid gas and deposits carbonate of lime as a sediment.

(b) Adding **carbonate of soda** (washing soda), which combines with the carbonic acid gas.

(c) Adding **lime water**, which unites with the carbonic acid gas to form solid chalk.

(d) Adding **ammonia**, or **borax**.

5. Experiments.

- (a) Put same amount of soap shavings in two bottles, one half filled with rain water and the other half filled with hard water. Shake. One lathers quickly, the other may require more soap before it lathers at all.
- (b) Add some lime water to half a bottle of soapy water and shake. The soap curdles.
- (c) Take half a bottle of hard water and fill up with lime water. Mix, let stand some time, and then filter. Test the filtered water for softness. (See 4 (c) above).
- (d) Test 4 (a), 4 (b), and 4 (d) also by experiment.

II. PREPARATION FOR WASHING DAY.

1. Removal of stains.

- (a) **Tea, coffee, or cocoa.** Pour boiling water through at once. If dry, mix 1 tablespoon of borax with a quart of boiling water, soak the stain in this a few minutes, then rub well and rinse in clean water.
- (b) **Fruit.** Sprinkle with salt and pour boiling water through, or soak with salt and lemon juice.
- (c) **Grease.** Rub with soap and dip into very hot soda water, or rub with benzine.

2. Mending. Mend cotton or linen articles.

3. Sorting clothes. Separate soiled clothes into heaps: (a) handkerchiefs; (b) underclothing and bed linen; (c) towels, tablecloths; (d) prints and coloured things; (e) flannels and woollens; (f) stockings; (g) kitchen towels, dusters, etc.

4. Shaking, etc. Shake out loose dust.

5. Soaking clothes. Soak only white cotton and linen things. Soap soiled parts. Soak handkerchiefs with salt, and kitchen towels, etc., with washing soda.

6. Collect all materials for washing.
7. Fill copper and set the fire for an early start.
8. Arrange for washing-day meals.

PRACTICAL.

III. WASHING WHITE COTTONS AND LINENS.

1. The process of Washing.

- (a) After soaking, soap and rub in warm water.
- (b) Change into fresh warm water and rub again, paying attention to dirty parts.
- (c) Rinse in hot water, then boil in copper two-thirds full of soapy water for 20 minutes.
- (d) Lift out into hot water and rinse.
- (e) Rinse in clean cold water, then in blue water.
- (f) Fold with tapes and buttons covered, and pass through wringer into basket.
- (g) Wipe clothes line, and hang out clothes wrong side out, and so as to catch the wind.

2. Boiling clothes.

- (a) Use soap shavings, 1oz. to 1 gallon of water.
- (b) Put clothes in when water is warm, but not boiling.
- (c) Boil collars, laces, etc., in a bag.
- (d) Boil the cleaner clothes first, and kitchen towels, etc., last with soda.

3. Blueing clothes.

- (a) Give a squeeze or two of the blue bag to the water, and mix well.
- (b) Prepare just before use.
- (c) Rinse a few articles at a time, so that blue gets to all parts alike.
- (d) Remove from blue water within a few minutes.

4. Hanging out.

- (a) Peg out garments by strongest parts.
- (b) Peg out sheets and tablecloths six inches over the line, looping the articles, and pegging bottom corners between the top ones.

- (c) Pin collars, etc., to thin towel, and cover while drying.
 - (d) Dry curtains and thin materials only in calm weather.
 - (e) Damp and fold neatly ready for mangling or ironing.
5. **Mangling.**
Purpose—
 - (a) Makes ironing easier.
 - (b) Saves labour of ironing sheets, towels, etc.Method—
 - (a) Wipe rollers and apply pressure.
 - (b) For feeding to rollers fold articles evenly with buttons, etc., inside.
 - (c) Turn handle by steady motion.
 - (d) If necessary fold again, and mangle.
 - (e) When finished release the pressure and cover the mangle.

LESSON II.

I. LAUNDRY UTENSILS.

1. Washing-machine.

- (a) Use. To save labour of rubbing by hand and to save time.
- (b) Kinds. 1. Wooden box, lined with battens and rollers, standing on rockers.
2. A cylindrical box lined with rollers and fitted with a wooden disc and projecting arms, called a dolly, which is revolved by turning a handle attached to a wheel so that the clothes are moved about in hot soapy water.
- (c) Care. Keep sweet and clean.
- (d) Cost. The O.K. from £4 10s.

2. Tubs should be built in.

- (a) Use. For soaking and washing clothes in.
- (b) Care. Scrub wood with hot soapy water.
Scour galvanised iron with sandsoap.
Hang up movable iron tubs by handle.

LAUNDRY WORK

3. **Papier-mâché basins** are much used in class work. They are made of compressed paper, enamelled on both sides to prevent the water soaking through. They are light and durable.
To clean. (a) Rub with a damp cloth dipped in salt, or rubbed with a damp cloth and sapolio.
(b) Dry thoroughly.
Cost from 2/9.
4. **Scrubbing board.**
(a) Use. To rub heavy or much soiled clothing upon.
(b) Care. Keep clean and in a dry place.
(c) Cost. From 1/6.
5. **Washing copper.**
(a) Use. For boiling clothes in.
(b) Care. Fill two-thirds full before lighting the fire, and put out the fire before emptying. Scour with salt and vinegar, then wash and dry, or rub with kerosene.
(c) Cost, with cast iron frame, 14 gallons, from £4 5s.
6. **Boiler stick.** Use part of a broom handle.
(a) Use. To poke down clothes or lift them from the copper.
7. **Wringing Machine (or Wringer),** is chiefly adapted for the wringing of wet clothes. The pressure expels the water without injury to the fabric.
To use.
(a) Fold articles evenly.
(b) Place buttons, hooks, etc., inside folds.
To clean.
(a) Relieve the pressure from the rollers when machine is not in use.
(b) Clean the cogs.
(c) Clean the rubber rollers with a cloth dipped in turpentine.
Cost. Iron frame, 12in., from £1 5s.; 14in., from £1 10s.

8. Mangle.

- (a) Use. See page 76. Dust before using.
- (b) Care. Keep dry and under cover, with pressure released. Oil cogs as required.
- (c) Cost. Stand mangle, 24in. roller, from £5 10s.; table mangle, 24in. roller, from £2 10s.

9. Clothes Line.

- (a) Use. To dry clothes upon.
- (b) Care. If galvanised wire, wipe with damp cloth before use.
- (c) Cost. Galvanised wire, 60ft., 1/6.

10. Pegs.

- (a) Use. To fasten clothes on the clothes line.
- (b) Care. Keep in bag or box. Collect carefully after use. Keep clean and dry. (Scrub or boil occasionally).
- (c) Cost. 2d. per dozen.

11. Clothes Basket.

- (a) Use. To hold wet clothes.
- (b) Care. Keep clean and dry. Wash with soap and water. Use salt water to harden.
- (c) Cost. From 4/6.

12. Irons.

- (a) Kinds. Flat-iron, box, polishing, goffering, gas, and electric.
- (b) Use. To give smooth surface to clothing, household linen, etc.
- (c) Care. Rub on bath-brick and clean with duster. If dirty scour with Brooke's soap.
- (c) Cost. Enterprise (Mrs. Potts) set of 3 irons, stand and holder, 9/-; sand irons, tinned tops, per lb., 5½d.

13. Iron-stands.

- (a) Use. To rest hot irons upon.
- (b) Description. Strong, 3in. high.
- (c) Care. Keep clean.
- (d) Cost. From 1/-.

14. Iron-holders.

- (a) Use. To protect hand from heat of flat-iron.
- (b) Make. Several thicknesses of cloth or flannel with brown paper or leather between.

15. Ironing-table. Any strong kitchen or unpolished dining-table. Before use cover with old blanket and calico ironing sheet pinned together.

PRACTICAL.**II. WASHING WOOLLENS.****1. Washing white woollens.**

- (a) Shake out loose dust.
- (b) Add 1 tablespoon ammonia to every gallon of warm soapy water. Wash through two waters.
- (c) Rinse out all soap in warm water.
- (d) Rinse through tepid blue water.
- (e) Fold and pass through wringer.
- (f) Shake out and dry away from strong sunlight.
- (g) Mangle or use cool iron while still damp.
- (h) Air, fold, and put away.

2. Washing coloured woollens.

- (a) Wash as above without using ammonia.
- (b) A little vinegar in rinse brightens the colours.

3. Washing blankets.

- (a) Wash once a year on a hot windy day.
- (b) Wash thoroughly in washing-machine with plenty of soapy water and a cup of ammonia.
- (c) Rinse out all soap in several warm waters.
- (d) Fold and pass through wringer.
- (e) Shake out, stretch, and hang out till dry.
- (f) Air, fold, and store.

LESSON III.

I. ALKALIES USED IN LAUNDRY WORK.

1. **Definition.** An alkali is a substance that has the power of neutralizing acids and converting them into salts. The alkalies used in laundry work are **carbonate of soda** (also called **washing soda**, and **soda ash**), **potash**, and ammonia (or spirits of hartshorn). In addition to these alkalies a substance called borax is used, which is a salt, that is, an acid neutralized by an alkali.
2. **Properties.**
 - (a) Soften water. (See page 73).
 - (b) Dissolve grease.
 - (c) Cause vegetable colours to run and to leave a fabric.
 - (d) Burn fibres, if strong.
3. **Experiments** to show action of alkalies and acids on coloured goods.
 - (a) Wash a small piece of coloured print with warm water and strong soda. Note how colours first run into one another and finally all dye leaves the material.
 - (b) Leave the bleached material to soak till next lesson. The fibre has perished.
 - (c) Wash a piece of coloured print with weak soda. Rinse out the soda and rinse again in weak vinegar (acetic acid) water. Colours are brightened.
 - (d) Soak coloured print in strong vinegar and water or in oxalic acid. Test the fibre. It has perished.

II. BRAN AND BRAN WATER.

1. **Bran** is the brown outer covering of wheat beneath the husk, separated from the flour after grinding. It contains about 7% of ash.
Use. To remove grease from furs or felt.

2. **Bran water** is made by boiling bran gently for half an hour in four times its quantity of water. The process may be repeated once with the same bran.

Use. To wash holland, cretonne, and coloured embroideries. The effect is to cleanse and stiffen.

PRACTICAL.

III. MAKING BOILED STARCH.

- (a) Mix starch to smooth paste with cold water. Add a small quantity of borax, or wax.
- (b) Pour in boiling water and stir until the mixture becomes clear.
- (c) Add a little cold water to prevent lumps.
- (d) Weaken to required strength.

IV. LAUNDERING PRINTS AND COLOURED COTTONS.

1. Washing.

- (a) Use no washing soda.
- (b) Wash quickly in luke-warm soapy water, with the addition of 1 tablespoonful vinegar to a gallon of water, rubbing as little as possible.
- (c) Rinse out soap in luke-warm water.
- (d) Rinse in cold water with a little salt or vinegar, and wring.

2. Starching.

- (a) Use 1 pint of boiled starch to 2 pints of cold water. Starch and wring out.
- (b) Shake out and dry quickly in the shade.

3. Ironing.

- (a) Damp and leave rolled tightly for 30 mins.
- (b) Prints with raised patterns and sateen must be ironed on wrong side.
- (c) Use iron not too hot.

- (d) Plain prints are ironed on right side.
- (e) All double parts, hems and bands, must be ironed on both sides.
- (f) Air, fold, and put away.

V. Ironing a skirt.

1. Pass the ironing board through the skirt and rest the ends on two tables.
2. Iron the band and placket.
3. Commence ironing back of skirt from hem to band.
4. Move skirt round and keep on ironing in the same way until the whole is done.
5. If the skirt has frills, iron plain part under the frills first.
6. If material has a raised pattern iron on wrong side on a thick blanket.
7. Air thoroughly and hang up by tapes.

VI. WASHING CRETONNE.

1. **Cretonne**, light in colour.
 - (a) Wash the same way as coloured prints.
 - (b) Starch in equal quantities of made starch and cold water.
 - (c) Dry slightly and iron on the wrong side to preserve a dim appearance.
2. **Dark cretonne**, chintz and art work.
 - (a) Have bran water ready according to recipe. Add to it a little soap jelly or melted soap.
 - (b) Add salt in the proportion of 1 tablespoon to a gallon of water.
 - (c) Wash by kneading and squeezing, do not rub.
 - (d) Rinse at once in bran water with salt or vinegar added to it.
 - (e) Fold with a cloth between the folds, and wring as tightly as possible.
 - (f) Iron at once on the wrong side with a very hot iron.

LESSON IV.

I. STARCH.

1. **Sources of supply.** Common laundry starch is made from potatoes, and the best from rice. Potatoes are pulped and water run over the mass to carry off the starch, which is then washed clean and dried. Rice is treated with caustic soda to burst the starch cells. The material obtained is well washed, dried, and ground. It is then washed with soda, and lastly with clean water.
2. **Composition.** (See page 21).
Starch is insoluble in cold water.
3. **Test.** For iodine test for starch see page 11.
4. **Use in laundry work.**
Used for cottons, linens, muslin, and laces
 - (a) to improve their appearance by making smooth and stiff.
 - (b) to keep articles clean and tidy longer.Starch is made for use with either hot or cold water.
Hot-water starch is used to stiffen laces, muslins, and linen and cotton materials. The degree of stiffness depends on the kind of material and individual taste.
Cold-water starch is used for collars, cuffs, and shirt-fronts that require to be really stiff.
5. **Strength of starch.** The strength to make starch varies with the article to be stiffened and the taste of the person using it.
 - (a) Lace curtains, d'Oyleys, and muslin screens require about equal parts of made starch and water.
 - (b) Pillow-slips, under-skirts, frocks, pinafores, blouses, and prints require about 1 to 3.
 - (c) Table linen requires starch about 1 to 8.
 - (d) Fine under-linen about 1 to 15.

6. Experiment with starch.

- (a) Make a teaspoonful of boiled starch as directed below. The starch forms a jelly.
- (b) Take a teaspoonful of dry starch, and stir in boiling water. The result is the starch forms lumps instead of a smooth jelly. The reason is that boiling water added to dry starch swells some grains and not others. Hence, mix with cold water first.

PRACTICAL.

II. HOW TO MAKE STARCH.

1. Cold water starch.

Starch, 2 tablespoons.

Cold water, $\frac{1}{2}$ pint.

Turpentine, a few drops.

Borax, 1 teaspoon dissolved in a little boiling water.

- (a) Mix the starch and cold water together by hand.
- (b) Add turpentine and dissolved borax.
- (c) Strain through muslin.
- (d) Leave a few hours, then stir up and use.

2. Boiling water starch.

Starch, 2 tablespoons.

Borax, $\frac{1}{2}$ teaspoon.

Wax, a few shreds.

Cold water sufficient to mix starch to a smooth liquid.

Mix the starch thoroughly smooth with cold water. Add borax and wax. Stir in boiling water till the starch becomes semi-transparent.

III. LAUNDERING COLLARS.

1. Starching.

- (a) Separate folds of linen.
- (b) Steep in cold-water starch, then rub starch into all parts alike.
- (c) Wring out as much starch as possible.
- (d) Rub starch from surface of material.
- (e) Roll tightly in a clean cloth and leave for about an hour.

2. Ironing.

- (a) Spread wrong side up on clean ironing sheet.
- (b) Rub lightly with a damp muslin to remove loose starch and work fullness to the bottom.
- (c) Press lightly on wrong side with hot iron to set the starch.
- (d) Iron lightly on right side.
- (e) Press heavily on right side to remove blisters and creases.
- (f) Continue on both sides till dry and smooth.
- (g) Polish, shape, and air.

3. Polishing.

- (a) Lay out on hard board.
- (b) Damp right side slightly.
- (c) Bring out gloss by pressing heavily with hot polishing iron, first across then lengthways of the collar.

LESSON V.**I. SOAP.****1. Composition.**

All soaps are compounded of some kind of fat or oil with an alkali, either caustic soda or caustic potash. Hard soaps are made from the firmer animal and vegetable fats with caustic soda, while soft soaps are made from the more fluid oils with caustic potash.

(a) Hard Soaps.

Common soap is made from tallow mixed with caustic soda dissolved in water (called lye) and the mixture boiled for several days. The yellow tint is produced by adding resin.

Castille soap is made from olive oil boiled with caustic soda.

Brown windsor is made from tallow and olive oil boiled with caustic soda.

Marine soap is made from coco-nut oil and caustic soda. This soap will dissolve in salt water, and is used on board ship.

Curd soap is harmless to the most tender skin.

Sandsoap, which contains fine sand, is useful for scouring metals and unpolished wood.

Two valuable by-products of soap manufacture are glycerine and water-glass. The former has useful healing properties, and the latter is the foundation of most modern egg preservatives.

- (b) **Soft soap** is made from fish oils (whale, seal, or cod), or vegetable oils (olive, linseed, cotton seed), with lye made by dissolving caustic potash in water. The product is dark in colour, and still contains glycerine and other impurities that are refined out of hard soaps. It should not be used for washing any but very dirty articles.

2. Properties.

- (a) Soap dissolves grease and enables water to remove it from greasy articles.
(b) Soap softens hard water.
(c) If used too freely it discolours white clothes, removes dye from coloured things, and shrinks flannels, etc.

II. **SOAP POWDERS** are usually composed of soap, washing soda, borax, and lime. Though soap powder makes a good lather at once it is not economical to use, as it injures some fabrics and its cost is about five times that of washing soda.

III. BLUE.

1. **Composition.** Washing blue is manufactured from indigo, a dye obtained from the indigo plant. It may be obtained in solid or in liquid form. Solid blue is best for laundry use, as it is easier to control.

2. Use.

- (a) To counteract the yellow tint which perspiration and the use of soap and soda give to white garments, and thus restore their whiteness.
- (b) If used more liberally in rinse water it brightens black or blue materials after washing.

3. Care.

- (a) Keep dry in packet, away from light.
- (b) Wrap and tie in piece of flannel for use.
- (c) Squeeze flannel dry before putting away.
- (d) Clothes become streaky if left soaking in blue water.

IV. **BORAX** is a white powder, which, as found in a native state in Tibet and in California, is called tinal. The borax of commerce is chiefly made from the boracic acid of Tuscany, Italy, by neutralizing it with carbonate of soda. It is, therefore, a salt.

1. Properties and uses.

- (a) Soluble in boiling water but not in cold.
- (b) Slightly stiffens linen materials and gives a fine gloss.
- (c) Softens water.
- (d) Is an antiseptic, and kills insects.
- (e) Is a food preservative.
- (f) Removes grease from clothing.
- (g) Will remove stains.
- (h) Will bleach linen, laces, etc.

V. **WASHING SODA** or carbonate of soda is a mineral and an alkali. It is found both in solid form and in solution in lakes, and was formerly also made from the ashes of seaweeds. Nowadays the substance is manufactured on a very large scale from common salt, by the aid of oil of vitriol, limestone or chalk, and coal dust.

1. **Properties.** Its properties are those of alkalies.
See page 80.
2. **Use.**
 - (a) Rinse all soda out of clothing before drying.
 - (b) Do not use soda for woollens, as it removes the natural grease and shrinks them.
 - (c) Store in covered jar, as it strengthens by loss of moisture if exposed to the air.

PRACTICAL.

VI. WASHING AND IRONING A BLOUSE.

1. **Wash** as described for white clothes, prints, or silks according to the material. See pages 75, 81, and 91.
2. **Ironing a cotton blouse.**
 - (a) Damp with warm water, roll up tightly, and leave a few hours.
 - (b) If lined, iron lining first, then tapes.
 - (c) Iron small parts first, then sleeves and cuffs.
 - (d) Iron fronts and back, taking care to iron into the gathers.
 - (e) If embroidered, iron on the wrong side. Air well.

LESSON VI.

I. BLEACHING.

Definition. Bleaching is the method used to remove hard stains or to restore whiteness to discoloured white cottons. There are three methods: (a) with chemicals, (b) by action of sunshine, and (c) by action of frost.

1. Bleaching with chemicals.

Chloride of lime, when used as a bleaching agent for laundry purposes, is better dissolved in water, as its strength is so great that it quickly burns holes in any fabric. For ordinary laundry

purposes dissolve $\frac{1}{2}$ lb. chloride of lime in $\frac{1}{2}$ gallon of water, mix thoroughly, strain and bottle. Before using this solution for bleaching dilute it in six times its bulk of water. It must be used only for white cottons, as it will destroy the fibres of wool and silk. Chloride of lime is much used in bleaching works for the bleaching of calico and linen.

How to use.

- (a) Steep discoloured clothes in the bleaching liquid for 1 hour or longer.
- (b) Dry in the open.
- (c) Repeat the process a second time if not a good colour.
- (d) Wash as white cottons.

2. Action of Sunshine.

- (a) The clothes must be washed and while wet hung or spread in the bright sun.
- (b) When dry, wet and dry again, leave outside all day. With this method the fibres are not at all weakened.

3. Action of Frost.

- (a) The clothes must be firmly pegged or spread on the grass while wet.
- (b) As the fibres become hard when exposed to frost, the clothes must be handled with care or the material will crack.
- (c) The clothes must not be removed till the linen becomes limp.

PRACTICAL.

II. IRONING AND FOLDING TABLE LINEN. All table linen must be damped and rolled up tightly some hours before ironing.

1. Table cloth.

To iron.

- (a) Stretch the cloth well, pulling the threads into place.

- (b) If the table is large enough spread the cloth lengthways or fold in halves right side up.
- (c) Iron with a heavy hot iron till quite dry and glossy. If folded bring underside to the top and iron till dry.
- (d) Iron by the selvedge, which must be kept straight.
- (e) Roll up the ironed part till all is ironed.
- (f) Open the cloth, fold with the right side in, and press the crease.

To fold.

- (a) Bring the selvedge back to the middle on either side, making a screen fold of four.
- (b) Press the folds with the iron.
- (c) Roll up.

N.B. Do not always fold in the one way, as table cloths tend to wear out at the creases.

2. Serviette.

- (a) Place flat on the table right side up.
- (b) Iron straight by the selvedge, then by the hem.
- (c) Iron wrong side in the same way.
- (d) Fold in three by the selvedge.
- (e) Name or monogram should be on the top in the left-hand corner. Press with the iron.

3. Tray cloth.

- (a) Iron hem first on the right side then on the wrong.
- (b) Iron embroidery or crochet on the wrong side.
- (c) Iron the centre of tray cloth on the right side, and on the wrong if a pattern.
- (d) Fold with as few creases as possible.

4. d'Oyleys.

- (a) Iron the centre linen first on the right side.
- (b) Iron the lace or crochet on the wrong side only on a thick ironing cloth, as this brings out the pattern or monogram.
- (c) If frilled, iron the frill till quite dry, then goffer.

LESSON VII.

I. SILK.

1. **Origin and composition.** Silk is made up of fine threads of glossy fibres produced or spun by the silk-worm. Each fibre consists of an outer coat of "silk gum" and an inner layer of "fibroin," which is pure silk fibre.
2. **Kinds.** The chief kinds are Indian, Chinese, Japanese, and Tussock silk. The latter is much darker and coarser than the white silk of China or Japan, but is recommended for its durability.
3. **Laundering.** Most silks if properly treated should wash and "do up" like new. A preparation of gum arabic is used for the latter purpose.

II. GUM ARABIC.

1. **Origin, etc.** Gum arabic is exuded from species of acacia trees grown in Arabia and Egypt. It may be bought as a brownish semi-clear solid, or as flour of gum.
2. **Use.** It is used in laundry work for stiffening silks, laces, delaines, and art work.
3. **Preparation and method of use.**

Gum arabic, 1 oz.; boiling water, 1 pint.

- (a) Place the gum in a basin; add the boiling water, and stir till quite dissolved.
- (b) Strain through muslin into a bottle.
- (c) Use 1 tablespoon to every pint of rinsing water for silks.

PRACTICAL.

III. WASHING AND IRONING SILK.

1. **To wash white silk.**

- (a) Soak in cold water to which a little dissolved borax has been added.
- (b) Wash in warm water with soap jelly.
- (c) Rinse in warm water and blue slightly.

- (d) Stiffen in gum water.
 - (e) Fold evenly in a towel and put through the wringing machine; leave about 1 hour, then iron.
2. **To wash coloured silk.**
- (a) Wash quickly in warm soapy water with vinegar added as for prints.
 - (b) Rinse and stiffen in gum water.
 - (c) Fold in a towel, and put through the wringer.
 - (d) Iron at once.
3. **To wash Tussore silk.**
- (a) Wash in warm soapy water.
 - (b) Rinse in warm water.
 - (c) Fold in a towel, and put through the wringer.
- (Note.—Tussore silk should not be stiffened as the gum water deprives it of its natural softness, and it should be nearly dry before ironing.)
4. **To iron silk.**
- (a) Place the silk on the ironing table right side up, cover with thin muslin, and iron till dry.
 - (b) Remove muslin and iron till smooth.
 - (c) The iron must not touch the silk while wet.

LESSON VIII.

I. STIFFENING AGENTS USED FOR SILKS AND LACES.

1. Gum water. See page 91.
2. Borax and water in the proportion of 1 teaspoon to 1 pint boiling water.
3. Sugar and water, in the proportion of 2 teaspoons to 1 pint of warm water.
4. Starch and water, in the proportion of 2 table-spoons of made starch mixed with 1 pint of cold water.
5. Rice water. Use the water in which rice has been cooked.
6. New milk.

PRACTICAL.

II. LAUNDERING OF LACE.

1. Washing white lace.

- (a) Shake to remove dust.
- (b) Soak in warm water to which borax has been added.
- (c) Wash by kneading and squeezing in hot water. Do not rub.
- (d) Rinse in warm water. Blue if necessary.
- (e) Stiffen in one of the above agents.
- (f) Roll in a towel and leave a short time.

2. Ironing lace.

- (a) Place the lace on a thick towel or pad wrong side up.
- (b) Iron till dry, taking care that the pattern is in good shape.

3. Black lace.

- (a) Brush well with a soft brush.
- (b) Do not wash unless necessary.
- (c) Wash in cold tea rather weak.
- (d) Stiffen in gum water.
- (e) Place in the folds of soft paper, and iron with warm irons till dry.

III. IRONING AND FINISHING UNDERCLOTHING.

1. Rules for ironing body linen.

- (a) Garments must be damped some time before ironing.
- (b) Iron trimmings on the wrong side, then the neckbands, yokes, and sleeves.
- (c) Iron double parts first on the wrong side, then on the right.
- (d) Iron body part of garment.
- (e) Tucks or pleats must be ironed on the right side.
- (f) All gathers must be thoroughly dried while ironing.
- (g) Fold garments into an even length for airing.

2. To fold a slip bodice.

- (a) Fold both sides of the front from neck to waist, making it same width as the back.
- (b) Fold back and front together into a straight strip.
- (c) Turn sleeves under the bodice, only leaving the trimming of sleeve to be seen.
- (d) Fold in half, leaving the front on the top.

3. To fold a night gown.

- (a) Place the gown on the table, the back uppermost.
 - (b) Fold the side seams till they overlap, making the night gown an even width from the top.
 - (c) Fold sleeves across, so that only trimming will show.
 - (d) Fold skirt till the front only is nicely shown.
-

LESSON IX.

I. DISINFECTANTS.

- 1. **Purpose.** The object of disinfecting clothes is to destroy all germs of infectious disease.
- 2. **Chemical disinfectants.** To obtain the above result the following substances may be used without injury to the fabrics:—(a) Eucalyptus; (b) Carbolic Acid; (c) Jeyes' Fluid.
- 3. **Use.**
 - (a) Mix 4 tablespoons of either disinfectant with 2 gallons of water.
 - (b) Soak clothes 24 hours in prepared disinfectant.
 - (c) Wash in the usual way.
- 4. **Natural disinfectants.** Sunshine and frost are also good disinfectants, and garments are treated in the same way as for bleaching. (See page 88).

5. **Saturated steam pressure** is the best method for purifying large articles, such as mattresses, that cannot be treated by the simpler methods. As this cannot be done without great trouble, sanitary authorities provide the apparatus suitable for carrying out the work.

PRACTICAL.

II. LAUNDERING A SHIRT.

1. To iron.

- (a) The shirt must be starched in cold water starch, and left some hours before ironing.
- (b) Starch the front, neckband, and cuffs, taking care to rub in the starch, but not to starch the body part of shirt.
- (c) All unstarched parts must be ironed first.
- (d) Double the back lengthways and iron both sides below the yoke.
- (e) Iron the yoke and shoulders.
- (f) Iron collar band quite dry and shape well.
- (g) Iron unstarched part of the front, then the sleeves doubled, on both sides.
- (h) Iron cuffs in the same way as detached cuffs and collars.
- (i) Place the shirt board under the front, smooth out creases with a piece of damp muslin.
- (j) Iron lightly at first from waist to neck, then more heavily till the front is smooth and stiff.
- (k) Let the shirt thoroughly dry, then polish in the same way as for collars. Air well.

2. To fold.

- (a) Place the front downwards.
- (b) Fold over both sides to the width of starched front. Press with the iron.
- (c) Bring the sleeves down lengthways.
- (d) Fold in three, leaving the starched front on top.

LESSON X.

I. COMPARISON OF FABRICS.

1. **Wool** is of animal origin, and is the natural covering of the sheep. Being light and soft, as well as a non-conductor of heat, it is invaluable as an article of clothing. It is also very absorbent, and is therefore less likely to cause a chill to the wearer if it becomes damp than either cotton or linen. It is an expensive item of clothing, but in a country with sudden climatic changes it is to some people an absolute necessity.

2. **Linen** is of vegetable origin, and is made from flax (*Linum*) fibre. When purified it is quite white in appearance, glossy, and very strong. It is more expensive and luxurious than cotton, but more durable, and keeps its colour better. It is not so good for under garments as cotton, as it carries off the heat of the body, and is more likely to give colds and rheumatism. Linen pillow cases are often used as they are cool and pleasant to the head.

Damask is a figured linen, greatly used for table cloths and serviettes. It may be bought bleached or unbleached. The unbleached is cheaper, and wears better than the bleached.

3. **Cotton**, like linen, is of vegetable origin, and is made from the downy material which surrounds the seed of the cotton plant. Cotton now largely takes the place of linen, as the fabric is not only durable but cheaper and warmer to wear.

PRACTICAL.

II. GOFFERING AND CRIMPING OF FRILLS.

1. **Goffering irons** are scissor-like in shape, and made of iron or steel. They should be heated on top of the stove under an iron, and never poked into the fire.

2. **Goffering** gives trimmings such as lace and frills a finished and regular or fluted appearance.

Method.

- (a) All laces and frills to be goffered must be full and must be ironed quite dry.
- (b) The goffering irons must be quite clean and warm.
- (c) Clip the trimming between the goffers, and give a firm but gentle twist.
- (d) Draw out the goffering iron.
- (e) Goffer away from you, to prevent creasing of the flutes.

3. **Crimping** is suitable only for linen or muslin frills. Crimped frills look like crimped paper, and will not crush easily.

Method.

- (a) The frill need not be ironed, but must be dried.
- (b) Use a very cool iron.
- (c) Hold a part of the frill between the first finger and thumb. Keep close to the irons.
- (d) Draw the iron slowly away.
- (e) Crimp a small piece at a time.

LESSON XI.

I. USE OF FLANNELETTE.

Flannelette, although made entirely of cotton, has a woolly surface, and is very warm; but, as it is very inflammable it is dangerous to wear, especially for children. If garments are dipped in a solution of alum water before drying they become less inflammable.

Boiling water, 2 quarts. Cold water, 1 quart.

Alum, 2 ozs.

Dissolve the alum in the boiling water, then add the cold water.

PRACTICAL.

II. GENERAL CLEANING.

1. **Cleaning of laundry utensils.** See page 76.
2. **Washing hair or toilet brushes.**
 - (a) Prepare a basin of warm soapy water, and add to it borax or ammonia in the proportion of 1 dessertspoon to a quart of water.
 - (b) Comb the hairs from the brush.
 - (c) Dip in and out of water quickly several times, till the brush is quite clean.
 - (d) Care must be taken not to wet the back of the brush more than can be helped.
 - (e) Rinse in warm water, then shake well.
 - (f) Dry in the sun or by the fire.
3. **Cleaning a sponge.**
 - (a) Steep in borax and hot water, or soda and hot water, or vinegar and hot water; proportion, 1 tablespoon to a quart.
 - (b) Squeeze out of steeping water.
 - (c) Rinse in cold water.
 - (d) Sponges should always be hung up, not left in the soap dish.

III. AIRING AND STORING OF CLOTHES.

1. **The linen press.**

Clean clothes are best kept in a **linen press**, which should be situated in the driest and warmest part of the house (for example, near the hot water cylinder), and be well fitted with shelves. All clothing, whether house linen or body linen, should be well aired, mended, counted, checked, and methodically put away. Clean things, when put away, should be placed underneath those already in the press.

2. **Airing clothes.**

Too much attention cannot be paid to the airing of clothes. If not well aired they strike cold to

the body, and the putting on of damp clothing, or sleeping in damp sheets, is very likely to cause colds and rheumatism.

IV. IRONING MADRAS OR ART MUSLIN CURTAINS.

1. Damp, roll up, and leave for 20 to 30 minutes.
 2. Beginning with hems and frills, iron on wrong side only with moderately hot iron.
 3. Air and fold without further ironing.
-

LESSON XII.

I. SUITABLE CLOTHING.

Clothing should be suited to the sex, size, age, and purse of the wearer, as well as to the weather and the season of the year. To a great extent fashion and custom determine what is suitable at any particular time and place, though extremes of fashion are best avoided at all times and places.

II. CLEANING HATS.

1. **Washing white linen hats.** Wash as white cottons.
2. **Washing coloured linen hats.** Wash but do not boil. Starch and iron as coloured prints.
3. **Washing white straw hats.**
 - (a) Remove hat band or ribbons.
 - (b) Brush off all dust.
 - (c) Make a solution of oxalic acid and water, using 1 teaspoon acid to $\frac{1}{2}$ pint boiling water.
 - (d) Brush over with an old tooth brush dipped in the solution.
 - (e) Rinse in cold water and dry.

4. Bleaching white straw hats.

- (a) Place a saucer containing a dessertspoon of sulphur in an air-tight box large enough to hold the hat.
- (b) Suspend the hat by a string in the box and light the sulphur.
- (c) Close the lid and leave for a few hours.

III. TO REMOVE STAINS. Revise page 37.**IV. SPECIAL CARE OF BABY'S CLOTHES.**

Baby's clothes are usually made of fine or delicate materials, and should be washed most carefully. As they are never very dirty no soda need be used, for it tends to destroy the fine muslins.

- (a) Baby's clothes should be washed every day.
- (b) Dried in the open air.
- (c) Carefully ironed and aired.

PRACTICAL.**V. IRONING BABY'S ROBE.**

As the robe is made of muslin or cambric it requires stiffening, but if too stiff the appearance is spoilt, and it crushes easily. The method of ironing depends upon shape and trimming.

Method.

- (a) Iron sleeves and bodice first.
- (b) Have a piece of damp muslin by you, and keep the robe damp as you iron.
- (c) Iron frills or embroidery.
- (d) Iron the plain part of skirt over a skirt board.
- (e) Touch up the bodice and lace.
- (f) Air well.

COURSE II.

LESSON I.

(N.B.—Revision of Housewifery Lessons in Course I. to be taken as occasion arises.)

I. VENTILATION.

1. **Definition.** Ventilation consists in causing the used-up air to pass out of rooms and fresh air to replace it without producing a draught.

Fresh air is a mixture of nitrogen and oxygen, in the proportion of about 4 to 1, with a very small percentage of carbonic acid gas and a trace of ammonia. Impure or used-up air is warmer and moister, has much less oxygen, and is charged with much more harmful carbonic acid gas than pure air.

2. **Means of ventilating rooms.** Being warmer and therefore lighter than fresh air, bad air rises to the top of rooms, and that is where the best outlets are placed. Rooms are ventilated by chimneys, by windows, and by special pipe or other ventilators leading from near the ceiling to the outside.

3. **Rules for ventilating.**

- (a) Leave chimney open.
 - (b) Leave windows and doors open as long as possible.
 - (c) Fasten bedroom windows open at the top at night.
-

II. FRUITS.

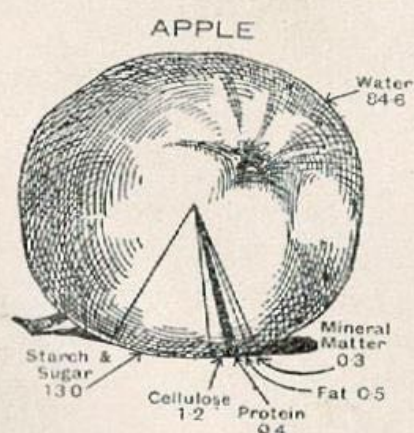
1. Food Value.

Fruits, like vegetables, are valuable to us on account of the fresh juices and mineral salts they contain. They are low in food value, but they are pleasant and refreshing, act as a tonic, and help to stimulate the appetite for other foods. Cooked fruit is generally more wholesome than raw fruit. If fruit is eaten raw care should be taken to see that it is properly ripe. Both under-ripe and over-ripe fruits are unwholesome: before ripening the fruit is hard, indigestible, and acid; when over-ripe the fruit has begun to decay. The process of ripening changes all the starch in green fruit into sugar and gums. Fresh ripe fruit consists of sugar, gummy substances, vegetable acids, salts, a little protein or fat, and a large percentage of water.

2. Kinds.

(a) The grape ranks first among fruits on account of its many and varied uses:—

- (1) as a fresh fruit,
- (2) as a dried fruit for puddings, cakes, etc.
- (3) grapes are made into the finest wines.



Constituents of Apple

(b) The **apple** is undoubtedly the most useful fruit. It can be eaten either cooked or raw. It goes well with other fruits such as blackberries and quinces. Apples are also used for making cider. The pulp of a well-cooked apple is one of the most easily digested vegetable substances which can be given

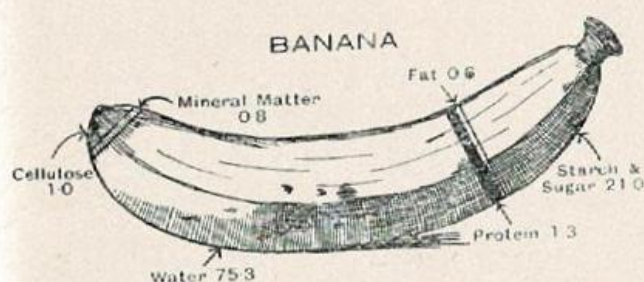
to an invalid or an infant. The food value of the apple is shown in the accompanying diagram.

(c) **Stone fruits**, such as plums, peaches, and cherries, are much more wholesome and digestible cooked than raw.

(d) **Sub-tropical fruits.**

Oranges are pleasant and refreshing, and on account of the citric acid they contain are often eaten for their medicinal effect. They are largely used for making marmalade. Orange juice is a valuable food for young children.

Bananas are most nutritious as they contain a fair amount of nitrogenous matter.



Constituents of banana

They are not always easy to digest. In the unripe state before the starch has been changed to sugar, they are much more wholesome and digestible if they are cooked and served as farinaceous food. The food

value of the banana is shown in the accompanying diagram.

(e) **Dried fruits.** The chief of these are—Grapes in the form of currants, sultanas, and raisins, prunes (dried plums), figs and dates. Currants are extremely indigestible. All dried fruits are very nutritious, figs and dates especially, because of the high percentage of sugar they contain, which has replaced much of the water constituent that was in the fresh fruit. A pint of milk and 6 ozs. of figs make a satisfying meal. Raisins, dates, and figs are usually eaten uncooked, but they are delicious when stewed or steamed. Dried fruits are valuable to us in the winter when fresh fruit is scarce and dear. The water, which is evaporated from the fruit, must in many cases be supplied before cooking.

3. **Cooking of fruits.** Fruit may either be baked, stewed or steamed.

Baking is used with large fruit such as peaches, apples, pears, or quinces.

Stewing. Since fresh fruit contains much water, little more need be added in cooking. The juice should barely cover the fruit. Cook very gently until the fruit is soft but not broken.

4. **Preserving of fruits.** Fruits may be preserved in the following ways:—

- (a) Dried, as raisins, currants, and figs.
- (b) Bottled (or canned), as gooseberries, plums, apricots, peaches, and pears.
- (c) Preserved in sugar, as jams and jellies.

5. **Experiments to test the composition of banana.**

- 1. Heat a small piece on stove-top. Water vapour is given off. Sugar oozes out, browns, and then catches alight. The black carbon reaches red heat and burns away, leaving mineral ash.
- 2. Heat a small piece with water. Test with iodine. Starch is found to be abundant.

III. RULES FOR COOKING VEGETABLES.

(Note.—For food value of vegetables see page 25.)

1. **Root vegetables.**

- (a) Wash them thoroughly, then peel thinly, or scrape them as necessary.
- (b) Let them stand in clean cold water until time to cook them, in order to preserve the colour.
- (c) Cook them in boiling salted water with the lid on the saucepan. Old potatoes are put into cold water and brought to the boil.

2. Green vegetables.

- (a) Trim the outer leaves and cut stalks off, then put them to soak in plenty of cold water with a little salt in it to draw out the insects.
- (b) Cook in plenty of boiling salted water with the lid off the saucepan.
- (c) Add soda to the water; this softens it and helps the vegetables to keep their colour.
- (d) All vegetables must be well drained before serving.

RECIPES.**APPLES IN RED JELLY.**

Apples, 2.

Cloves, 2 or 3.

Sugar, 2 tablespoons.

Carmine, a few drops.

Lemon rind and juice, a quarter.

Water, $\frac{1}{4}$ pint.

Cornflour, 1 dessertspoon.

1. Peel and core the apples whole.
2. Stick them with the cloves.
3. Put water, sugar, lemon rind and juice, into saucepan.
4. Bring to the boil and colour with carmine.
5. Put in the apples and let them cook gently till tender.
6. Lift out carefully and place in dish.
7. Mix cornflour with a little cold water; stir it into the hot syrup.
8. Boil for a few minutes, then pour over the apples.

MEAT AND TOMATO SAVOURY.

Tomatoes, 4 medium-sized.

Cooked minced meat, 2 tablesp.

Bread crumbs, 1 tablespoon.

Milk or gravy, to moisten.

Salt and pepper, to taste.

Chopped parsley, 1 teaspoon.

Dripping (melted), 1 teaspoon.

1. Cut off the tops of tomatoes and scoop out the centre with a spoon.
2. Mix this with the other ingredients.
3. Fill the tomatoes with the mixture.
4. Sprinkle bread crumbs over the top.
5. Bake in the oven until the tomatoes are soft, but not broken.

GREEN PEAS.

1. Shell and wash the peas.
2. Put them into boiling salted water, adding 1 teaspoonful of sugar, and a sprig of mint.
3. Boil uncovered from ten to twenty minutes.
4. Serve hot with butter, pepper, and salt.

LESSON II.

I. JAM-MAKING.

Jam-making preserves the fruit by cooking it in a boiling syrup. By this process the water is drawn out and sugar takes its place. Bacteria cannot grow in a thick syrup although mould may form on the top. The best jam is made before the fruit is quite ripe. The reason is that when the fruit is ripe the fruit acid is more fully developed, and the skin is often tough.

1. General Rules.

- (a) In making jam, the fruit and water should be boiled together first for a little while. If the sugar is added at the beginning the acid in the fruit changes the sugar immediately into **glucose**, which has less sweetening power. More sugar would, therefore, be required.
- (b) **Quantity of sugar.** The average proportion is about $\frac{3}{4}$ lb. to 1 lb. of fruit.
- (c) **Quantity of water.** With juicy fruit no water is required; with others just sufficient to keep it from sticking to the pan.
- (d) **Time required to cook.** Boil for about three-quarters of an hour.
- (e) Fruit must be dry, unbruised, fresh, and on no account over-ripe.
- (f) An enamelled, brass or aluminium pan should be used, never iron or tin as it would spoil the colour and flavour of the jam. Use a wooden spoon.
- (g) Boil quickly to preserve the colour.
- (h) Skim carefully.
- (i) Make in small quantities as the jam cooks more quickly, and is generally better.

2. To cover jam.

A good covering for **boiling hot** jam or jelly is paper dipped in or brushed over with flour and water mixed to the consistency of thick cream. This allows the steam to evaporate, the heat sets the paste and makes the covering air-tight.

For covering jam when cold it is best to use tissue paper wetted on the under side with milk. Some people use gummed paper, or a boiled flour or cornflour paste. White of egg is also used.

3. Storing jam.

- (a) Jam will not keep unless it has been well cooked.
 - (b) The jars must be quite full and all air excluded.
 - (c) Store in a dry, cool place.
-

II. EXPERIMENTS.

Tests for sugar. For grape-sugar (lactose) add a little fresh Fehling's Solution, heat gently till boiling, and a red mixture (oxide of copper) is obtained. To test for cane sugar first boil in water with a few drops of hydrochloric acid, then add a little fresh Fehling's Solution. A similar red mixture is obtained. Thus cane sugar has to be changed into grape-sugar by acid and heat before it will answer to the test.

RECIPES.**APRICOT JAM.**

Apricots, 12 lbs.

Water, 1 pint.

Sugar, 9 lbs.

1. Halve the apricots and remove the stones.
2. Weigh the fruit and sugar.
3. Put the fruit in a large basin, cover with the sugar and leave 24 hours.
4. Crack the stone and skin the kernel.
5. Put fruit, syrup, and nuts in a preserving pan, bring to the boil, stirring all the time.
6. Boil three-quarters of an hour; remove any scum.

PLUM JAM.

1. To every lb. of fruit allow $\frac{3}{4}$ lb. of sugar.
2. Wash the fruit, and halve if very large.
3. Bring to the boil, add the sugar.
4. Boil half to three-quarters of an hour.

MIXED PICKLES.

Vinegar, 2 quarts.	Turmeric, $\frac{1}{4}$ oz.
Ground ginger, 2 ozs.	Curry powder, $\frac{1}{4}$ oz.
Black pepper, 1 oz.	Sugar, $\frac{1}{2}$ lb.
Cayenne pepper, $\frac{1}{2}$ teaspoon.	Apples (sour), 3.
Mustard, 6 ozs.	

1. Peel and cut the apples thin.
2. Boil with the vinegar until liquid thickens.
3. Add all the other ingredients and boil a few minutes.
4. Cut some cauliflower, small onions, beans, green tomatoes, and chillies into pieces.
5. Sprinkle with salt and let them remain twenty-four hours.
6. Drain them, and put into the liquor.
7. Boil up a minute, bottle and cover them.

LESSON III.**I. YEAST.****1. Description and growth.**

Yeast consists of a collection of minute one-celled plants. These grow rapidly by budding or by the formation of spores, provided that conditions are favourable, viz.; an even temperature of about 80° F., moisture, and a supply of food in the form of starch and sugar. Cold checks their growth, as does hot water or a temperature above 130° F.

2. Kinds of yeast.

- (a) **Liquid yeast**, procurable from breweries, or made from yeast plants added to a mixture of potatoes, hops, sugar, and water.



Yeast plants

(b) **Dry yeast**, consisting of yeast plants reared in a weak sugar solution called wort, dried, mixed with starch, and sold in small squares. The plants lie dormant until the conditions favourable to growth described above are again provided for them.

(c) **Compressed yeast** differs from dry yeast in containing less starch and being therefore slightly moist, so that the growth of yeast plants is not entirely arrested. When fresh it has a creamy colour, and no unpleasant smell. Unfortunately it will keep only from 8 to 10 days. Those who can be sure of procuring it fresh find it much more convenient to use than liquid yeast.

3. Action of yeast in bread-making.

Chemical changes take place as follow:—

- (a) The yeast plant in the dough changes starch to sugar.
- (b) The yeast feeds on the sugar, fermenting it, that is, changing it into alcohol and carbonic acid gas.
- (c) When the dough is again kneaded this gas is distributed evenly through the mass, becomes entangled in the elastic gluten, and expands the dough, making it light and porous.
- (d) Baking kills the yeast plants at once, bursts the gluten walls of the starch cells, and drives off the alcohol as vapour.

Note—The dough turns sour

- (a) if allowed to rise too long, that is, if fermentation is continued too long;
- (b) if too high a temperature is kept up during rising.

4. Other changes caused by baking.

- (a) Heat coagulates the expanded gluten so that the bread keeps its spongy texture after cooling.
- (b) The outside becomes hard and dark in colour, partly owing to the drying, and partly to the formation of **dextrine** from the starch by heat.

5. Comparison with other raising agents. See page 48.

II. BREAD-MAKING.

1. **Food Value of Bread.** The value of bread as food lies in the fact that it is rich in two very important food stuffs, starch and gluten. It is one of the most wholesome and economical of foods. Eaten as it usually is with butter, it gives to the body all the necessary food constituents, hence its name, "the staff of life."

2. Rules for making bread.

- (a) Everything must be warm: warm basins, warm liquid, warm flour.
- (b) Keep the dough at an even temperature; put in a warm place, and cover with a cloth.
- (c) Allow the dough sufficient time to rise.
- (d) Knead well, so as to break the air bubbles, and to distribute the yeast evenly through the dough, thus preventing the formation of holes in the loaf.
- (e) Bread must be baked in a hot oven.

RECIPES.

BREAD.

Flour, 14 ozs.

Salt, 1 teaspoon.

Compressed yeast, 1 teasp. Warm water (92° F.), about

Sugar, 1 teaspoon.

$\frac{1}{2}$ a pint.

1. Put flour into a warm basin.
2. Mix yeast, sugar, and half the warm water together; stir it into the flour.

3. Mix salt and remainder of water, add to the dough using more warm water if necessary.
4. Knead the dough, which should be soft, well with the hands in the basin; sprinkle with flour.
5. Put it in a warm place to rise; leave it about one hour.
6. Turn on to a floured board. Knead well for seven minutes. Divide into two portions.
7. Place on a warm tray, or in a greased tin. Leave for ten minutes.
8. Bake in a hot oven half an hour.

YEAST BUNS.

Milk, $\frac{3}{4}$ pint.	Yeast (compressed), 2 tablesps.
Sugar, 1 teaspoon.	Flour, $\frac{1}{2}$ lb.

1. Cream yeast and sugar together.
2. Make milk lukewarm and pour on to yeast.
3. Mix gradually into the flour, and knead the whole lightly.
4. Put to rise for 1 hour in a warm place.

Remainder of Ingredients.

Flour $1\frac{1}{4}$ lbs.	Eggs, 2.
Butter, $\frac{1}{4}$ lb.	Sultanas, $\frac{1}{4}$ lb.
Candied peel, 2 ozs.	Sugar, $\frac{1}{4}$ lb.

1. Cream the butter.
2. Add sugar to the sifted flour.
3. When "sponge" is ready beat in with the hand all these ingredients alternately.
4. Put mixture to rise for another hour.
5. Turn on to floured board, cut into equal portions.
6. Roll smooth and round, put on tray to prove for a few minutes.
7. Bake in a quick oven about twenty minutes.
8. When cooked brush over with a syrup made with 1 oz. sugar and $\frac{1}{2}$ teacup water, boiled for a few minutes.

LESSON IV.

I. **MEAT.** (See also Course I. Lessons III. page 14, V. page 21, and XIV. page 51.)

1. **Definition.** Meat includes the flesh of all animals that are used for food, such as beef, veal, mutton, lamb, pork, poultry, and game.

2. Structure of meat. Meat is built up of muscles, fat and bone.

- (a) Muscles consist of bundles of fibres held together by tissues. The hard-worked tissues such as those of the legs and neck are stronger and tougher than those of the back.
- (b) Fat is found immediately beneath the skin, separating the bundles of fibres, and surrounding some of the internal organs. The proportion varies in different meats. In well-fed mature animals there is a greater proportion of fat, which has taken the place of some of the water constituent of the flesh. See page 22.
- (c) Bones consist of water and solid matter in about equal proportion. About two-thirds of the solid matter consists of phosphate of lime and carbonate of lime, the remaining third being animal matter, chiefly fat and ossein. Hollow bones contain a fatty substance called marrow. When bone is boiled in water most of the animal matter is turned into gelatine or glue and dissolved in the water. For this reason in making soup bones are put into the water as well as the flesh.

3. Composition of meat. All meats contain the same constituents though the proportion of these differs in different parts of the same animal, and in similar parts of different animals, varying with the kind, the age, and the condition of the animal.

4. Food value of meat.

Being very like the human body in structure and composition, meat supplies almost the right proportions of protein and fat to build up the body, to repair waste tissue, and supply the necessary heat and energy.

RECIPES.**RICE AND CHEESE.**Rice, $\frac{1}{2}$ teacup.Grated cheese, $\frac{1}{2}$ teacup.Milk, $\frac{1}{2}$ pint.

Salt and cayenne, to taste.

Breadcrumbs, $\frac{1}{2}$ teacup.

1. Cook the rice and milk slowly, until the liquid is all absorbed.
2. Stir in the cheese, breadcrumbs, and seasoning.
3. Put into a pie dish and brown in a hot oven.

KEDGEREE.

Smoked fish, 1 teacup.

Butter, 1 tablespoon.

Rice, $\frac{1}{2}$ teacup.

Seasoning, to taste.

Egg, 1.

1. Boil the egg hard and cut the white into dice.
2. Boil the rice till tender.
3. Boil the fish for 10 minutes, then flake it.
4. Melt the butter in a saucepan, add the rice, fish, and seasoning.
5. Make very hot, then pile on a hot dish.
6. Sprinkle over some hard-boiled yolk rubbed through a strainer, and some chopped parsley.

Note.—White sauce may be used instead of butter.

FRUIT SQUARES.

Sugar, 1 breakfast cup.

Some lemon juice or acid.

Boiling water, 1 breakfast cup.

Some small oranges, or dates,

Cold water, $\frac{1}{2}$ breakfast cup.

figs, etc.

Gelatine, 1 oz.

1. Soak the gelatine in the cold water for half an hour.
2. Put in an enamelled pan with the sugar and boiling water.
3. Boil for 15 minutes, then pour half on to a flat dish.
4. Cover with sections of orange.
5. Pour remainder of liquid over.
6. When cold cut into squares.

LESSON V.**I. RE-HEATING COOKED FOOD.**

Food that is **re-heated** is often said to be indigestible and lacking in nourishment. But this is not the case if certain rules are observed.

1. Rules for re-cooking meat.

- (a) It must be remembered that the food is already cooked, and only needs **re-heating**.
- (b) As warmed-up meat has less flavour and nourishment than freshly cooked meat it must be re-heated in a good gravy or sauce, and special care taken in seasoning. Vegetables such as carrots or onions must be cooked before adding them to the meat.
- (c) Several kinds of meat may be minced together and used, which adds to the flavour of re-heated food.
- (d) The bones from the joint should be broken up and put on to boil with water, vegetables, rice or barley, and a good soup will thus be made.

2. The principal methods of re-heating are:—

- (a) Cooking in a good gravy, *e.g.*, hash, mince, or curry.
- (b) Covering with mashed potatoes, *e.g.*, shepherd's pie.
- (c) Covering with egg and crumbs, *e.g.* rissoles or croquettes.
- (d) Covering with pastry, *e.g.*, meat patties or pastry rissoles.
- (e) Dipping into batter, *e.g.*, meat fritters.

3. Croquettes and Rissoles.

Croquettes and rissoles are mixtures of meat, fish, or vegetables with a thick white or brown sauce for a binding; or instead of the sauce, beaten egg may be used. They are then dipped in egg and breadcrumbs, and fried in smoking hot fat. Left-over meat, vegetables, or fish can be made into appetising dishes in this way. Prepared over-night they make an excellent breakfast dish, as they can be cooked in a few minutes. They can be made up in the form of balls, croquettes, cakes, or pear-shapes.

RECIPES.**RISSOLES.**

Minced meat, 1 breakf. cup.	Stock, 1 teacup.
Mashed potatoes, 1 teacup.	Dripping, 1 teaspoon.
Flour, 1 dessertspoon.	Worcester sauce, $\frac{1}{2}$ teaspoon.
Salt and pepper, to taste.	

1. Melt the dripping in a saucepan, add the flour, then the stock.
2. Stir till it boils.
3. Add meat, seasoning, and potatoes.
4. Form into a roll on floured board.
5. Divide into portions and shape into balls with floured hands.
6. Dip in beaten egg, then in breadcrumbs.
7. Fry in smoking hot fat a golden brown.

Note.—Rissoles may be covered with flour and fried, or dipped into batter and fried.

SHEPHERD'S PIE.

Minced meat, 1 breakfast cup.	Mashed potatoes, 1 breakf. cup.
Onion (chopped), 1 small.	Dripping, $\frac{1}{2}$ teaspoon.
Gravy or stock, $1\frac{1}{2}$ teacups.	Pepper and salt, to taste.

1. Fry the onion golden brown in the fat.
2. Mix it with the meat, gravy and seasoning.
3. Put into a greased pie dish.
4. Cover with some nicely mashed potatoes.
5. Put some little pieces of dripping over the top.
6. Bake in moderately hot oven for about half an hour.

LESSON VI.**I. GRILLING OR BROILING AS A METHOD OF COOKING.** (See also page 15.)

The fire must be bright and clear, and free from smoke, and the gridiron should be greased and heated before using. If there is too much flame a sprinkle of salt will reduce it. Grilling is suitable only for pieces of meat from 1 to 2 inches thick and so small that the whole of it is cooked in the short time that it is in contact with the great heat needed to coagulate the albumen on the outside. Care and skill

have to be exercised to cook the meat without burning or smoking the outside. Place the steak or chop very close to the fire and turn frequently, but avoid raising it too often or the juices will drain away before the surface albumen hardens and the meat will become dry and tasteless. A well-grilled cut of meat should swell with the expanding juices and vapours inside it. A little fat may be left on the meat to be grilled, but if there is too much it drops and spoils the fire. Do not prick the meat with a fork or the juices will escape. Use a knife and spoon or a pair of grilling-tongs to turn with.

Pan broiling is cooking in a hot frying-pan, and is sometimes more convenient than broiling directly over a fire.

BROWN GRAVY SOUP.

Lean gravy beef, 2 lbs.
Butter or dripping, $\frac{1}{2}$ oz.
Carrot, 1 cut into dice.
Mace, 1 blade.

Cold water, about 3 pints.
Small bunch of herbs.
Pepper and salt, to taste.

1. Cut the meat into small pieces.
2. Make butter hot in saucepan and brown meat slightly.
3. Add the rest of the ingredients and simmer for 2 hours.
4. Strain, skim off fat, season and serve.

TO GRILL A CHOP OR STEAK.

1. Make up the fire some time before you want it; it must be very bright and clear.
2. Warm the gridiron, grease the bars, and put the meat between.
3. Place close to the fire, and turn the meat first on one side, then on the other.
4. A chop takes about 7 minutes to cook; a piece of steak 10 or 20 minutes, according to thickness.
5. Sprinkle with pepper and salt, and put on to a hot dish.
6. Place a small piece of butter on top and serve at once.

VICTORIA SANDWICH.

Flour, 3 ozs.
Ground rice, 1 oz.
Sugar, 4 ozs.
Butter, 2 ozs.

Eggs, 2.
Water, 1 tablespoon.
Baking powder, 1 heaped teasp.

1. Sift the flour, baking powder, and ground rice together.
 2. Cream the butter and sugar.
 3. Beat the eggs light; mix the water with them.
 4. Add them to the butter and sugar gradually, and beat well.
 5. Lastly add the flour quickly.
 6. Bake in two shallow greased tins.
 7. When cold put together with lemon honey or any nice filling.
 8. Sift icing sugar over the top.
-

LESSON VII.

I. FLOUR.

1. **Manufacture.** Flour is made by grinding wheat between either millstones or rollers. A succession of grindings is usually carried out by which the flour is ground finer and finer. After each grinding the flour is sifted through silk. The coarse brown outer coverings of wheat are known as bran. Wholemeal or brown flour contains more of the bran than ordinary flour, and is therefore more nourishing though less easily digested.
2. **Constituents of flour.** Ordinary flour is composed of about 11.3% protein, 74.6% starch and sugar, 1.1% fat, .5% mineral matter, and 12.5% water.
3. **Experiment.** To prove that flour contains starch and gluten.
 - (a) Tie some flour in a piece of muslin.
 - (b) Knead gently in a basin of water.
 - (c) Work till no more starch comes through the muslin.
 - (d) The starch settles in basin as a white powder. Test it with iodine; there should be a dark blue coloration.
 - (e) The soft, elastic mass left in the muslin is gluten. From 10 to 13% of flour is gluten. Test with nitric acid. It should turn yellow, as all nitrogenous substances do.

It is owing to the properties of gluten that wheat-flour is so suitable for bread-making.
4. **Tests to tell good flour.** (See page 129).

RECIPES.**FLAKY PASTRY.**Flour, $\frac{1}{2}$ lb.

Salt, a pinch.

Lard, 3 ozs.

Water, to mix.

Butter, 3 ozs.

1. Put flour and salt into basin.
2. Divide the fat into 4 parts and rub 1 part into the flour.
3. Mix together with cold water to a flexible paste.
4. Turn on to a floured board and roll into a strip.
5. Spread another part of the fat on in little pieces.
6. Fold in three, close the ends, and roll out.
7. Repeat this until all the fat is used.
8. Roll out as required.

BEEFSTEAK PIE.Topside or gravy beef, $\frac{1}{2}$ lb.Chopped onion, $\frac{1}{2}$ teaspoon.

Salt and pepper.

Short or flaky pastry, $\frac{1}{4}$ lb.

Water or stock.

Flour, 1 dessertspoon.

1. Cut the meat in pieces; roll in flour.
2. Season with salt and pepper.
3. Fill a pie dish with the meat, add a little water or stock.
4. Roll out pastry.
5. Line the rim of the dish, then cover with pastry, and decorate neatly.

TREACLE TART.Short pastry, $\frac{1}{2}$ lb.

Breadcrumbs, 3 tablespoons.

Golden syrup, 3 tablespoons.

1. Line a tin plate with a round of pastry.
2. Cover with breadcrumbs, and then the golden syrup.
3. Cover with strips of pastry and bake in a hot oven till the pastry is well browned.

SAUSAGE ROLLS.Pastry, $\frac{1}{4}$ lb.

Sausages, 2.

1. Skin the sausages and divide each in two.
2. Roll the pastry out and cut into squares.
3. Put a piece of sausage on each square; wet one edge.
4. Fold over, and mark with three cuts on top.
5. Brush with egg and bake 20 minutes.

LESSON VIII.**I. HOUSEKEEPER'S DUTIES.**

The chief duties of a housekeeper are to arrange for

1. Keeping the house clean and tidy.
2. Washing and laundering of clothes.

3. Daily meals of the family.
4. Adjustment of expenditure for food, etc., to means at her disposal.

II. PLANNING OF DAILY MEALS.

Important points to consider are

1. The **number of persons to be fed**. The housekeeper should supply enough without having too much left over.
2. The using up of **left-overs**. For ways of saving food see page 55.
3. The **individual tastes** of members of the family have to be considered.
4. **Balancing the rations** by the week if not by the day.

In planning meals the housekeeper should have a correct knowledge of food values, so that the food principles are selected and combined in the right proportions. A well-balanced meal is one which has neither excess nor deficiency of protein, starch, sugar, fat, and mineral substances. We require twice as much carbonaceous as nitrogenous food, and about a quarter as much mineral food. The values of various foods, meat, soups, fish, eggs, milk, cheese, legumes, cereals, vegetables and fruit are given in different lessons. Few people require meat more than once a day, as it is a very stimulating food.

To sum up the requirements of the average meal:—

- (a) There should be one food rich in protein.
- (b) There should be enough fat skilfully blended.
- (c) There should be enough starch but no excess.
- (d) There should be green vegetables and fruit.
- (e) A sweet dish should come at the end of the meal.
- (f) Where meat is omitted eggs, milk, cheese, or dried peas and beans should be served.

- (g) The meals of the day should be complementary, that is, if one meal is poor let the next be rich to make up for it, or if meat be scanty serve a good soup or a rich pudding.
5. What is the **most suitable food** according to the age, sex, occupation, and state of health of individual members of the family.
6. **Climate** and **season** of the year. In cold weather food of a warming character, that is, containing fat, sugar, and starch, should be served, hot if possible. Cocoa, oatmeal porridge, hot thick soups and stews, and suet puddings are suitable. In warm weather lighter food should be served, such as clear soup, fish, poultry, eggs, junkets, vegetables, salads, and fruit.
7. **Cost of meals** must not exceed the means at the disposal of the housekeeper for food expenditure.

Cost of an average meal.

Dinner for two adults and five children.

				s.	d.
Leg of mutton	..	..	..	4	6
2 lbs. potatoes	..	..	..	0	3
1 cabbage	..	..	..	0	3
Apple pie	..	..	..	0	6
Fuel	..	..	..	0	6
Milk	..	..	..	0	2
Sugar	..	..	..	0	0½
Tea (for adults)	..	..	..	0	0½
				<hr/>	
				6	3
Less left-over meat	..	..	..	2	3
				<hr/>	
				4	0

If vegetables and fruit were home-grown the above estimate would be lowered by about 8d. Breakfast and tea should each work out at about half the cost of the above, as the children would require no meat and would be

given porridge, bread, butter, jam, milk, milk puddings, and plain cakes. The total cost of the family meals would thus work out at about 8s. a day.

RAISED PIE.

Pastry.

Flour, $\frac{1}{2}$ lb.

Milk and water, 1 teacup.

Dripping or lard, 2 ozs.

Salt, $\frac{1}{4}$ teaspoon.

Meat.

Some cooked or raw minced and nicely seasoned meat, veal and ham, mutton, beef, pork, etc.

1. Put flour and salt into basin.
2. Boil milk and dripping, and stir into flour with knife.
3. Turn on to floured board and knead lightly.
4. Divide dough into four equal parts and keep warm over a basin of hot water.
5. Take a portion and roll into a ball.
6. Make a hollow in centre, then work into shape with forefinger and thumb.
7. Fill with some of the minced meat, moisten with a little stock or water.
8. Roll out a little piece of dough for the lid.
9. Wet edges and join together.
10. Notch the edges with a knife.
11. Make a hole in centre, and twist a small piece of paper and put in hole to let steam out.
12. Brush with egg.
13. Cut a small band of paper and place round pie to keep it in shape.
14. Bake in a good oven about 20 minutes.
15. Pour a little gravy in the pie when cooked.

CHEESE STRAWS.

Grated cheese, 2 ozs.

Salt & c. pepper, a sprinkling.

Flour, 3 ozs.

Yolk of an egg.

Butter, 1 oz.

Water to mix.

1. Rub butter into flour with tips of fingers.
2. Add cheese and seasoning.
3. Beat yolk of egg with about a tablespoonful of water.
4. Add to flour, etc., and mix to a light paste.
5. Roll out on floured board and cut into strips.
6. Bake a pale brown in a moderate oven.

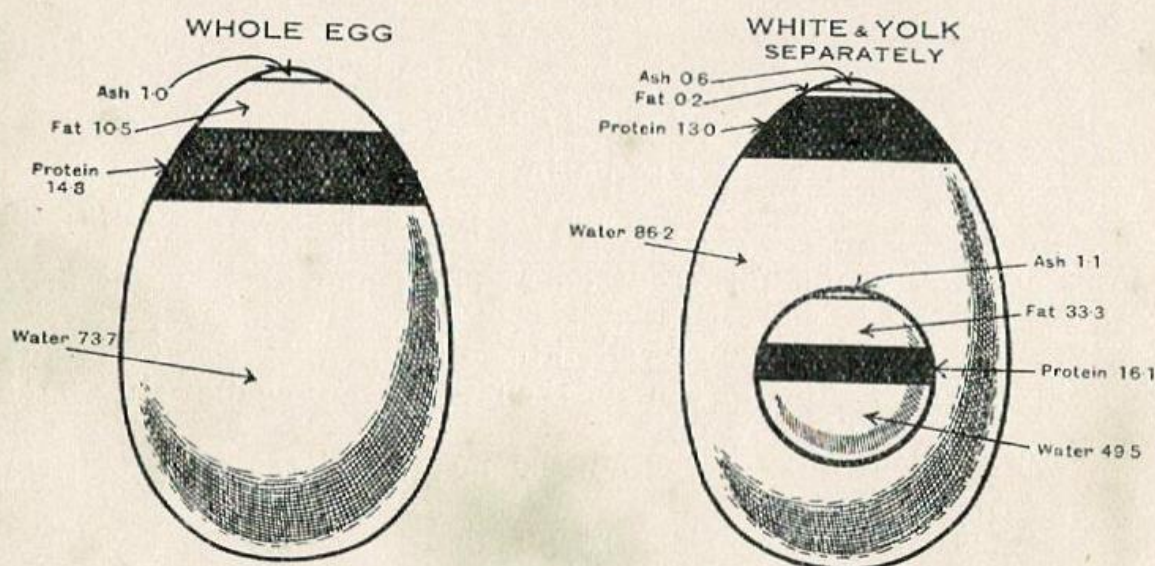
LESSON IX.

I. EGGS.

(For composition, food value, and use in cookery see page 35.)

1. Description.

The eggs of all birds are wholesome, but hens' eggs are most commonly used as they have the most delicate flavour. The egg forms a perfect food for the young chick, and is also a most



nourishing food for human beings. The average weight of an egg is 2 ozs.

2. Eggs in diet.

Eggs are wholesome or indigestible according as the mode of cooking adopted affects the albumen in them. They consist chiefly of **albumen**, a sticky colourless liquid belonging to the proteid class of foods. It very closely resembles the myosin of lean meat. When albumen is heated to 160° F. it becomes solid, opaque, and white; this change is known as **coagulation**; further heating hardens the albumen and makes it very tough and indigestible. To boil an egg hard keep it boiling quickly for 10 minutes. To cook it lightly put it into a saucepan when the water boils, then set it aside for five minutes. In this way no part of it is heated up to boiling-point, and the albumen

sets lightly just as the juices of the meat do when cooked slowly. An egg, cooked in this way, will be found to be light and easily digested.

3. **To test eggs for freshness.** See page 129.

4. **Care of eggs.**

(a) Wipe clean as soon as received.

(b) Store in a cool, dry place.

(c) Keep apart from strong-smelling foods, etc.

5. **To preserve eggs.**

To keep eggs for longer than a few weeks air must be prevented from getting through the porous shell to carry the germs of decay. The simplest, cheapest, and most satisfactory method of preservation is a solution of water glass in boiled water that has been allowed to cool. The proportion is 1 of water glass to 9 or 10 of the prepared water. Mix well and place in large jar or kerosene tin. Put in only the freshest eggs with sound shells when plentiful and cheap, and keep them covered. Store in a cool place.

6. **Experiments:—**

(a) Heat some clean egg shell. It chars slightly, showing carbon is present, though little in proportion to mineral.

(b) Drop acid on clean egg shell. Effervescence (of carbonic acid gas) takes place just as with chalk or limestone, proving presence of carbonate of lime, and explaining why laying hens eat lime and shells.

(c) Repeat experiment to coagulate albumen in white of egg. (Page 17).

(d) Mix egg yolk with water and heat. The yolk coagulates and separates. Use weak acid instead of heat. The result is similar. Heat and acid both coagulate yolk, proving presence of albumen.

(e) Add yolk of egg to some caustic soda or caustic potash, dissolved in water. Heat very carefully. The albumen coagulates. Remove this solid matter and boil 20 mins. longer. On cooling a soft yellow jelly is formed. This will lather in water, giving a soapy solution, and proving presence of fat in the yolk. Egg soap may be separated out by adding a little salt to the solution.

RECIPES

POACHED EGG.

Egg. 1.

Slice of hot buttered toast.

Salt and pepper, to taste.

1. Break the egg carefully into a cup.
2. Slip it into gently boiling salted water.
3. Simmer till the white is set.
4. Serve on hot buttered toast; sprinkle with pepper.

CHEESE PUDDING.

Milk, $\frac{1}{2}$ pint.

Salt and cayenne, to taste.

Grd. rice, 1 dessertspoon.

Butter, 1 oz.

Grated cheese, 2 ozs.

Egg, 1 (yolk & white separ'ted).

1. Mix the rice with a little cold milk.
2. Put the remainder with butter on to boil.
3. Stir in the ground rice; boil till the mixture thickens.
4. Add cheese seasoning, yolk of egg and whipped white.
5. Pour into a greased pie dish and bake till nicely browned.

OMELET.

Egg, 1.

Salt and pepper, to taste.

Butter, 1 teaspoon.

Milk, 1 teaspoon.

Parsley, 1 teaspoon.

1. Beat the egg a little, add milk, parsley, and seasoning.
2. Make butter very hot in a small frying-pan.
3. Pour in the egg mixture.
4. Cook it very quickly over the fire, stirring it and shaking the pan.
5. When beginning to set, fold the omelet into a half-moon shape.
6. Turn on to hot dish, serve at once.

LESSON X.

I. HEAT, TEMPERATURE, AND COMBUSTION.

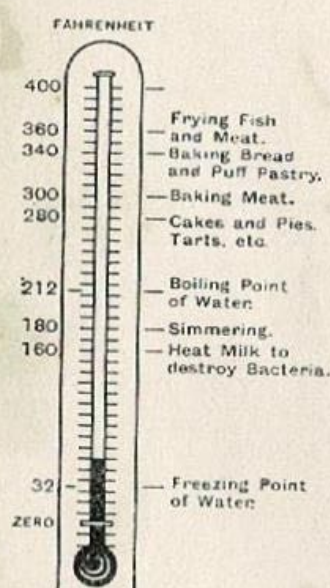
1. **Definition.** Heat is a form of energy as is shown by the fact that hot substances have their atoms in a condition of violent motion. Heat is either natural or artificial. Natural heat comes from the sun, artificial heat mainly from burning or combustion or from other chemical change. Most substances expand with heat and contract with cold.

2. **Distinction between heat and temperature.** The total amount of heat and the degree of heat of a body are seldom the same. A large bath of tepid water may contain more heat than a red hot poker, though the degree of heat of the poker is much the greater. Instead of the phrase "degree of heat" we use the word **temperature**. Heat flows from things at a higher temperature to those near by at a lower one. This movement of heat is called **radiation**. Some objects transmit heat quicker than others. They are called good **conductors**.
3. **Measurement of temperature by thermometer.** In a general way we are in the habit of measuring temperature by our sense of touch. But this sense is not always the best guide, for things feel hot or cold according to the state our hands or body are in at the time, and a good conductor like iron seems colder on a cold day and hotter on a hot day than a bad conductor such as wood. The only perfect measurer of temperature is an instrument called a thermometer. This consists of a small quantity of mercury enclosed in a glass bulb and hair-like tube from which all air has been removed. Heat and cold expand or contract the enclosed mercury, and these movements may be read upon a scale marked beside the glass tube.
4. **General effects of heat.** These are
- (a) To raise temperature.
 - (b) To cause expansion.
 - (c) To change the state of bodies (that is, from solid to liquid, from liquid to gas).
 - (d) To promote chemical action, *e.g.*, coagulate albumen, or change starch into sugar with heat, water, and acid, or make soap from fat with heat, water, and caustic soda.
5. **Body heat.**—The human body has been called a "living stove," and the meaning is that the

production of heat in the body is similar to that in a fire. Both in the body and in a fire combustion requires carbon and oxygen to support it, and the products in each case are heat, moisture, and carbonic acid gas, though the burning is much less rapid in the body than in the fire. For heat-giving foods see page 21.

6. **Use of thermometer in cookery.** According to Fahrenheit's thermometer water boils at 212° and freezes at 32° . According to the Centigrade thermometer water boils at 100° and freezes at 0° ; these are known as the "fixed points" of a thermometer.

The temperature needed for certain methods of cooking are shown in the accompanying diagram:—



7. **Simple tests for judging temperatures without thermometer:—**

Boiling. Bubbles all over the surface of liquid.

Simmering. Small bubbles at the side of the pan.

Frying. The fat becomes still and a faint bluish smoke rises from it.

Baking. Place a piece of white paper on the oven shelf.

If it at once turns black the oven is too hot for anything;

if it turns dark brown in five minutes it is suitable for pastry or anything requiring a hot oven;
if it turns golden brown in five minutes it is suitable for cakes or anything requiring a moderate oven.

8. **Boiling, Baking, and Stewing compared** (recapitulatory). Boiling and baking or roasting as methods of cooking meat are alike in that both require strong heat at first to coagulate the surface albumen and close the pores, and slow

heat afterwards to cook the inside of the meat. Stewing differs from both boiling and baking in that the meat juices are being slowly extracted by heat and the meat cooked in them.

RECIPES.

JAM ROLY POLY.

Flour, 4 ozs.	Sugar, 1 tablespoon.
Suet, chopped, 2 ozs.	Water, to mix.
Salt, a pinch.	Jam.

1. Roll the pastry rather thinly into an oval paste.
2. Spread jam over it, leaving a margin round the edges, and roll up.
3. Scald and flour a pudding cloth and roll the pudding in it.
4. Tie the ends tightly with string, leaving room for the pudding to swell.
5. Boil $1\frac{1}{2}$ hours.

STEWED RABBIT (in casserole or pie dish).

Rabbit, 1.	Water, $\frac{3}{4}$ pint.
Bacon, 3 or 4 slices.	Salt and pepper, to taste.
Onion, 1.	Dripping, 1 tablespoon.
Flour, 1 tablespoonful.	

1. Wash, wipe and dry the rabbit.
2. Cut it into neat joints and dip into seasoned flour.
3. Put rabbit into a pie dish or casserole with sliced onion, bacon, and water.
4. Place in a hot oven and cook slowly about $1\frac{1}{2}$ hours.
5. Serve in the casserole.

Note.—The bacon may be omitted.

The rabbit may be boiled, using the recipe for boiled mutton.

Savoury dumplings may be used for this or any other stew.

LESSON XI.

I. MARKETING.

So far as the cook is concerned marketing means the choosing and buying of all kinds of provisions. Some articles of food, such as meat, fish, bread, vegetables, etc., need to be bought fresh from day to day, while others, such as sugar, soap, and candles, are usually bought in larger quantities. Successful marketing demands the exercise of no little intelligence and knowledge,

and experience alone will cultivate these qualities to the required degree. Girls should visit the shops occasionally, and learn how to choose the various cuts of meat, fish, etc., and how to obtain the best possible value for the least possible expenditure. The golden rule in shopping is to buy the best of everything; it may seem the most extravagant at first, but usually proves the most economical in the end.

The following hints may be useful:—

1. If possible, do your own marketing. You then see for yourself what is best and cheapest for the day.
2. Deal from shops with a good reputation and a brisk trade, as the goods are fresher.
3. If possible, always pay cash for everything, as this commands the lowest prices.
4. Buy food when it is in season; it is then plentiful and at its best, therefore cheaper.
5. Meat or vegetables sold at a lower price than usual will not be quite as good or as fresh as they ought to be.
6. Watch the course of prices. See list of current prices on page 177.

Beef is the most economical meat to buy, as it has the least bone and the most nutritive material in a given bulk. Beef should be a bright red colour, and well marbled with creamy fat.

Mutton comes next in nutritive value. It is usually more tender if it has been well hung. The lean should be red and the fat firm and white.

Lamb and **Veal**, being the flesh of young animals, are not as nourishing or digestible as mutton and beef. They are finer in grain, and lighter in colour than either beef or mutton.

Pork, though very nourishing, is not easily digested. It is best when very lean. The fat should be firm and white, the skin thin. Pork is more liable to be diseased than any other meat,

therefore great care should be exercised in its choice.

Hams. As all meat becomes tainted near the bone first, test a ham by pushing a clean skewer in against the bone. On being pulled out it should have no unpleasant or rancid smell.

Fish must be perfectly fresh to be nice. Fish that has been kept on ice loses its flavour. A fresh fish may be known by

1. The brightness of its eyes.
2. The firmness of its flesh.
3. The redness of its gills.
4. The absence of any unpleasant smell.

Green vegetables should be bought fresh and crisp as required.

Potatoes may be bought in large quantities and stored in a cool dark place.

Sugar also may be bought in large quantities.

Butter must be fresh, firm, and free from water.

Eggs should be heavy and have rough dull shells. Fresh eggs look clear when held up to the light. A good egg sinks if placed in cold water; a bad one floats owing to the loss of weight due to the water and gases given off during decomposition.

Some foods are cheaper at certain seasons. If possible advantage should be taken of this to obtain a good supply. Eggs are a good example of this.

Flour should be creamy white and have no musty smell. It should have a gritty feeling, not being too smooth or fine. Good flour falls loosely apart after being squeezed in the hand.

Tea, coffee, and spices should be bought in small quantities as they very soon lose their flavour. Coffee beans should be bought freshly roasted, and ground at home if possible.

Tinned Foods. Choose tins that are in perfect condition and free from rust. The tins should not bulge, as this is a sign of fermentation.

Foods preserved in earthenware or glass jars are better and safer than tinned ones, but generally cost more money.

Flour, oatmeal, and dry groceries should be ordered in moderate supplies, as they go musty if kept too long.

Soap improves by keeping, and should be bought in large quantities, then cut up and dried before using.

Candles also improve by keeping; a good supply should therefore be kept on hand.

RECIPES.

STEWED OX-TAIL.

Ox-tail, 1.	Salt and pepper, to taste.
Onion, 1.	Stock or water, 1 pint.
Pieces of carrot & turnip.	Butter or dripping, 1 oz.
Blade of mace.	Flour, 1 oz.
Bunch of herbs.	

1. Cut the tail into joints and scald it in boiling water.
2. Dry and dip into flour.
3. Fry a golden brown in the hot dripping.
4. Cover with the stock, bring to the boil, and skim.
5. Add vegetables and seasonings.
6. Simmer gently for three hours or until tender.
7. Thicken the gravy with about 1 dessertspoonful of flour mixed with a little cold water.
8. Serve on a hot dish.

SHORTBREAD.

Flour, $\frac{1}{2}$ lb.	Castor or icing sugar, 2 ozs.
Butter, $\frac{1}{4}$ lb.	Salt, a pinch.

1. Cream the butter and the sugar.
2. Add the flour.
3. Work with the hand to a stiff paste.
4. Press the mixture into a tin.
5. Make the top quite smooth and prick with a fork.
6. Bake in a slow oven about half an hour.

LESSON XII.

I. HOW TO KEEP HOUSEHOLD ACCOUNTS.

Every good housewife takes care to keep her expenditure within her income, or in other words to avoid running into debt. The only safe and certain way to do this is to keep a careful record of receipts and expenditure day by day. Two preliminary steps are necessary.

1. **The least a person ought to save.** In New Zealand most people have sufficient to provide for all simple needs and something over. A man should first decide what is the least he ought to save by way of life insurance and P.O. Savings Bank deposit to make provision for accident, sickness, and old age.

2. **Rough division of income.** Next he should divide his remaining income roughly among the chief items of necessary expenditure, *e.g.*, rent, rates and taxes (if any), food, clothing, lighting, firing, education and recreation, medical advice or comforts, and incidentals. The housekeeper will then know the amount available for household expenditure. The course for her to follow will then be

- (a) To enter all transactions daily in an account book.
- (b) To file all accounts and receipted bills.
- (c) To balance accounts at the end of every month, and make out a yearly balance at the end of the year. If any balance is on the debit side, it is known at once that expenses will have to be reduced.

Specimen of a Monthly Household Account.

The following is an imaginary account kept by the housekeeper of a working man with a family

Month of January, 1917.

Note.—A kitchen garden and a few laying hens, if well kept, should add something to the balance on the credit side.

TOAD IN THE HOLE.

1. Make a batter of the egg, flour, and milk.
2. Grease a pie dish.
3. Cut the steak into pieces, put in the dish.
4. Pour the batter over the meat and bake about one hour in a moderate oven.

PANCAKES.

1. Mix flour and salt.
2. Add the egg and half the milk gradually.
3. Beat well until quite smooth, then add remainder of milk.
4. Let batter stand for a time.
5. Put the batter into a jug.
6. Put a very little fat in small frying-pan and make very hot.

7. Pour in enough batter to cover the bottom of pan.
8. Fry lightly, turn and fry other side.
9. Sprinkle with sugar, roll up and serve hot.

LESSON XIII.

I. DIGESTION. (See also page 63).

Experiments to illustrate Digestion.

1. Experiment to show the action of saliva.

Put some solid ptyalin (the active principle of saliva) and water, or some liquid saliva into a test tube with some starch. Maintain a temperature of about 98° F., and the insoluble starch in the mixture begins at once to change into soluble grape-sugar. Test with Fehling's Solution.

2. Experiment to show the action of gastric juice.

Mince some lean meat so as to imitate mastication. Put it into a test tube with a little water, some pepsin (the active principle of gastric juice), and two drops of hydrochloric acid. Heat the mixture to 98° F., and maintain this temperature for several hours. Stir frequently with a glass rod to imitate the churning motion of the stomach. A pulp is finally obtained in which the protein or nitrogenous substance has changed into **peptones** fit for absorption into the blood circulation.

3. Experiment to illustrate emulsification.

Shake some oil or melted fat in water. The two substances cannot be made to mingle, but always separate when at rest. Hence oil and fat are said to be insoluble in water. Now add a little alkali (soda or potash) and shake again. A milky fluid is formed, called an emulsion. The alkali has minutely divided the globules of oil or fat and spread them evenly through the liquid. This is the action of bile and pancreatic juice (both slightly alkaline fluids) on fatty foods in the small intestine.

RECIPES.

ABERDEEN SAUSAGE.

Steak, 1 lb.

Bread, $\frac{1}{2}$ lb.

Sausage meat, 1 lb.

Salt, pepper, thyme, to season.

Fat bacon, 1 oz.

Egg, 1.

1. Mince the steak and bacon.
2. Soak bread in cold water, then squeeze dry in a cloth.
3. Mix all ingredients well together; bind with the beaten egg.

4. Shape into a roll and tie in a floured cloth.
5. Boil for two hours.
6. Turn out and sprinkle with brown breadcrumbs.
7. Serve hot or cold.

(For breakfast or supper.)

BANANA CUSTARD.

Bananas, 4 or 6.

Cornflour, 1 teaspoon.

Egg, 1.

Sugar, 1 tablespoon.

Milk, $\frac{1}{2}$ pint.

1. Skin and slice bananas and sprinkle with sugar.
2. Mix cornflour with the milk.
3. Put into saucepan, add sugar, stir till it thickens.
4. Take off fire and add the beaten egg carefully.
5. Stir again over fire for 2 or 3 minutes.
6. Do not let custard boil.
7. Pour over bananas and serve hot or cold.

LESSON XIV.

I. ECONOMICAL AND WASTEFUL GRATES.

A wasteful grate is one that burns too much fuel in heating the oven or the water, owing to the length of time it takes to do this work.

Marks of an economical range grate.

1. Fire-box not too large for the size of the oven.
A false bottom may be used if it is necessary to raise the fire or reduce the fire space.
2. Well adapted for the kind of fuel used (wood or coal).
3. Draught sufficient and capable of being perfectly regulated. In particular the fire hole at the back must not be so large as to draw most of the heat up the chimney instead of over the oven. The fire, too, must draw well whichever way the wind is blowing. This depends partly upon its correct position in the room in relation to windows and doors.
4. The boiler at the back of the fire must be designed to heat quickly, that is, have as much surface exposed to heat as possible; but it must not be made so as to prevent the oven from heating quickly.

An economical open grate.

1. There should be free draught beneath the fire which can be controlled by a close-fitting iron shield or economiser.
2. Heat must be thrown into the room and not all drawn up the chimney. (To do this the grate requires to be near the hearth, to be long and shallow so as to provide a large surface for radiation, and the fire bricks at the back must be tilted forward.)

II. METHODS OF FRYING. There are two methods of frying, the deep (called wet or "friter"), and the shallow (called dry or "sauter.")

Deep frying, or frying in sufficient fat to cover the article fried, is used for fish, fritters, rissoles, etc.

Shallow frying, or frying in very little fat, is used for sausages, pancakes, omelettes, etc. In Europe oil is largely used for frying in, but in New Zealand lard, clarified fat, and butter are the fats chiefly used.

See also page 15 and page 26.

III. HOW TO RENDER AND TO CLARIFY FAT.**1. To render fat.**

- (a) Cut fat into pieces and put into an iron saucepan with a little water.
- (b) Boil till water has evaporated and pieces of fat are dry and brown.
- (c) Strain fat into basin and use when cold.
- (d) Fat may also be rendered in the oven.

2. To clarify fat.

- (a) Put the dripping into an iron saucepan and cover with boiling water.
- (b) Boil quickly 10 minutes.
- (c) Let it cool, then strain into a jar.
- (d) When set, lift up the fat, scrape away all impurities and pour away the water.

RECIPES.**FRIED STEAK AND ONIONS.****Beef steak, $\frac{1}{4}$ lb.****Dripping, 1 tablespoon.****Onion, 1.****Salt and pepper.**

1. Make fat very hot in the pan.
2. Put steak into pan and turn frequently while cooking.
3. Cook from 7 to 10 minutes.
4. Place on hot dish and season it.
5. Cut onion into thin slices and fry till lightly browned.
6. Place on top of steak and pour gravy round.
7. Serve with brown gravy. (See page 19).

DOUGH NUTS.**Flour, 8 ozs.****Egg, 1.****Butter, 2 ozs.****Milk, to mix.****Sugar, 2 ozs.****Soda, 1 level teaspoon.**

1. Sift the flour and soda.
2. Cream the butter and the sugar.
3. Add the beaten egg, then the flour.
4. Add enough milk to mix it into a stiff dough.
5. Roll out thin.
6. Either cut into rounds and join two rounds together with a little jam; or
7. Cut into rings.
8. Have a pan of deep fat.
9. Fry a golden brown, drain on paper.
10. Sift sugar over before serving.

LESSON XV.**I. DUST.**

1. **Description.** A beam of sunlight shows that the atmosphere is laden with minute particles of dust, consisting of tiny fragments of the different solid substances upon and above the earth's surface, which are transported from place to place by the wind. Dust in houses consists of soil, food particles, and whatever wears off our clothing, furniture, etc. Such dust is lifeless, but it harbours living dust comprising innumerable invisible germs or microbes which are minute living plants, known as moulds, yeast, and bacteria. The yeast plant

(see page 108) is of use, but some of the others produce deadly poisons that cause such diseases as diphtheria, typhoid fever, and tuberculosis.

2. **Dangers.** Disease in different forms is the chief danger that lurks in dust. Darkness, damp, dirt, and warmth are friends of living disease germs. Sunshine, cleanliness, and chemical disinfectants and deodorisers are bitter foes of harmful germ life. Of the latter Condly's Fluid, Jeyes' Fluid, and Carbolic Acid are useful allies of man in fighting bacteria.
 3. **Removal.** Frequent sweepings, washings, and scrubblings are necessary for the removal of dust and the prevention of its accumulation. The cleansing agents used are water, soap, washing soda, etc.
-

II. VARIATION IN DIET ADVISABLE FOR DIFFERENT CLIMATES.

1. Diet for Cold Climates.

In the winter a liberal diet of heat-giving foods (see pages 6 and 21) should be given, such as thick soups, oily fish, stews, suet puddings of all kinds, porridge, potatoes, hot if possible. The best food for intensely cold climates is fat. In the Arctic region the natives live chiefly on the oily flesh of the bear, seal, and walrus, of which they eat enormous quantities.

2. Diet for Hot Climates.

In the summer lighter foods should be given, plenty of fruit, vegetables, and salads, junket, clear soup, fish, poultry, etc. Fat is not needed except in very small quantities. In hot countries the great carbonaceous food is rice. (See page 44).

3. Diet for Temperate Climates.

The diet suitable for temperate climates is a selection from the foods named above for cold

and hot climates, varied according to the weather and the season of the year.

III. GELATINE.

1. **Composition, etc.** Gelatine is a transparent, tasteless, nitrogenous substance that may be obtained from the bones, connective tissues, hoofs, skin, etc., of animals. The crudest form of gelatine is glue. The best gelatine is isinglass, which is made from the air bladders of sturgeon. Gelatine is soluble in hot water, but forms into a jelly on cooling.
2. **Food Value.** It is used by the body to produce energy, and so saves other proteins for tissue building.
3. **Use.** Being very easily digested it is much used in invalid cookery, chiefly in the form of fruit and meat jellies. Such foods contain about 3% of gelatine. It is also used in confectionery.
4. **How to use.**
 - (a) Use about 1 oz. gelatine to 1 quart liquid, more if fruit is to be added.
 - (b) Soak gelatine well in cold water, then dissolve with boiling water.
 - (c) Add sugar while mixture is hot.
 - (d) Flavour or colour as desired.
 - (e) Strain into a wet mould.
 - (f) Stand in cold water several hours till set.
 - (g) To remove jelly from mould dip for a second into hot water, and invert upon cold dish.

RECIPES.

POTATO SOUP.

Stock or water, 2 pints.	Dripping, 1 oz.
Potatoes, 6 or 8 small.	Milk, 2 teacups.
Onion, 1.	Salt and pepper, to taste.
Celery, 2 sticks	Sago, 1 tablespoon.

1. Cut vegetables into slices and fry them in the dripping without browning.
2. Add water or stock and simmer till tender.

3. Rub through a sieve and return to saucepan.
4. Add milk, sprinkle in sago, and boil till clear.
5. Add seasoning and serve with small dice of fried bread.

FISH PIE.

Cooked fish, 3 oz. White sauce, about $\frac{1}{2}$ teacup.
Mashed potatoes, 3 ozs. Salt and pepper, to season.

1. Take away skin and bone from the fish and break it into small pieces.
2. Mix the sauce with it and put it into a pie dish.
3. Cover with some nicely mashed potatoes.
4. Put a little dripping on the top.
5. Bake in a moderate oven for about 20 minutes.

BANANA JELLY.

Water, 1 pint. Sugar, 3 tablespoons.
Bananas, 4. Lemon juice and rind, 1.
Gelatine, $\frac{1}{2}$ oz.

1. Slice the bananas in rings and lay them in a dish.
2. Soak gelatine in water until soft.
3. Put in a saucepan with sugar, lemon juice, and rind.
4. Boil for a few minutes.
5. Strain and when cool pour over bananas.

LESSON XVI.

I. CLEANING AND CARE OF METALS.

Cleaning. (See also page 51).

Household utensils and metal ornaments are made of tin, aluminium, pewter, copper, brass, or iron.

Metal cleaning agents are—

1. Hot water and soda or soap for removal of grease.
2. Fine sand or sand-soap for iron pots.
3. Sifted whiting mixed with water and ammonia to a paste for tin, silver, aluminium; and dry for final polishing.
4. Rottenstone and oil for brass, copper, and tin.
5. Sifted bath-brick and emery powder for steel.
6. Ammonia for general cleaning.
7. Vinegar and salt for brass and copper.
8. Black lead for polishing iron.

9. Various commercial preparations such as Brasso for brass taps, door knobs, etc., Silvo for silver-plated ware and silver, Brooke's soap for tins, copper, etc., and Old Dutch Cleanser for anything except silverware.

Apply cleansing agent with a soft cloth or brush, and polish with soft duster, velvet, or chamois-leather.

Care. Protect metals from tarnishing and staining as much as possible, and clean before they become really dirty. Avoid scratching aluminium or silver ware. Put away carefully when not in use.

RECIPES.

BEEFSTEAK PUDDING.

Skirt steak, 4 ozs.	Salt, $\frac{1}{2}$ teaspoon.
Sheep's kidney, 1.	Suet pastry, 4 ozs.
Flour, 1 teaspoon.	Water, about $\frac{1}{2}$ teacup.

1. Cut meat into small squares and dip in seasoned flour.
2. Make the pastry and cut off one-third.
3. Roll the larger piece and fit into a greased basin.
4. Put in the meat and the water.
5. Wet the edges and cover with the lid of paste.
6. Tie over with a scalded and floured cloth.
7. Boil $1\frac{1}{2}$ hours.

Note.—For suet pastry use recipe for Suet Dumplings (page 23), omitting seasoning.

NUT LOAF.

Flour, 2 breakfast cups.	Walnuts (chopped), $\frac{1}{2}$ breakf. cup
Sugar, $\frac{1}{2}$ breakfast cup.	Baking powder, 2 teaspoons.
Milk, 1 breakfast cup.	Salt, a good pinch.
Egg, 1.	

1. Mix all the dry ingredients.
2. Add beaten egg and milk.
3. Put into a greased cake tin.
4. Bake in a good oven for 1 hour.

LESSON XVII.

I. DISPOSAL OF KITCHEN REFUSE.

Burn all refuse as far as possible in the kitchen range, but choose a time when only a slow fire is

needed. Pull out the dampers so that the odours may escape through the flues into the open air. For all rubbish which cannot be burnt a **dust-bin** must be provided. It should be made of some non-absorbent material such as zinc or galvanized iron. All boxes or baskets are to be condemned. It should be fitted with a lid so that the contents cannot be blown about. It should be movable so that it can be carried or wheeled out and thoroughly emptied. If the dust-bin is not regularly emptied and certain rules of cleanliness observed it becomes a public nuisance and a danger to health. When empty it should be sprinkled with Jeyes' Disinfectant.

II. **CLEANING THE YARD.**

1. Avoid throwing paper, rags, tins, bottles, and other rubbish about; either burn in kitchen range, or throw direct into dust-bin.
2. Once a week tidy yard with rake and stiff bristle broom.
3. Wash down and disinfect asphalt or concrete about scullery door and outhouses.
4. Remove all refuse collected.

III. **USE AND ABUSE OF CONDIMENTS.**

Revise pages 56-58.

IV. **BROWN STEW AND WHITE STEW.**

See pages 15 and 16.

There are two kinds of stews.

1. **Haricot** or **brown stew**, in which the meat is fried first and then stewed.
2. **Irish** or **white stew**, in which the meat is put into the water and stewed. See page 16.

The quantity of water used in stewing should be enough to serve as gravy.

All stews must cook a long time and slowly, with the lid, and even a cloth as well, on the saucepan, to prevent the escape of flavour.

Vegetables and dumplings may be added to render the stew more tasty and satisfying.

Causes of failure in stewing.

1. Letting the stew cook too quickly.
2. Insufficient or over-cooking.
3. Gravy being too thin.
4. Careless seasoning.
5. Not removing fat from meat—result, a greasy stew.

RECIPES.

FRICASSÉE OF RABBIT.

Rabbit, 1.	Onion, 1, stuck with 2 cloves.
Stock or water, to cover.	Salt and pepper.
A bunch of herbs.	Parsley or onion sauce, 1 pt.

1. Soak rabbit in warm water for 1 hour.
2. Cut into neat pieces.
3. Place it in a stewpan with the stock, onion, and herbs.
4. Simmer for 1 hour or until tender.
5. Dish up neatly and pile on a hot dish.
6. Make the sauce with the liquor in which the rabbit cooked. (See page 40).
7. Pour sauce over and round.

QUEEN PUDDING.

Bread or cake crumbs, $\frac{1}{4}$ pint.	Sugar, 1 dessertspoon.
Milk, $\frac{1}{2}$ pint.	Jam.
Egg, 1 yolk & white separated.	Butter, 1 teaspoon.

1. Boil milk and pour it on to the breadcrumbs, sugar, and butter.
2. When slightly cooled, add the beaten yolk.
3. Put mixture into a greased pie dish.
4. Bake in moderate oven till set, but not brown.
5. Spread over it a layer of jam.
6. Beat white of egg to a stiff froth and mix with it 1 teaspoonful of sugar.
7. Pile this on the pudding.
8. Bake in a very moderate oven till set or slightly coloured.

LESSON XVIII.

I. FOODS SUITABLE FOR INFANTS AND YOUNG CHILDREN.

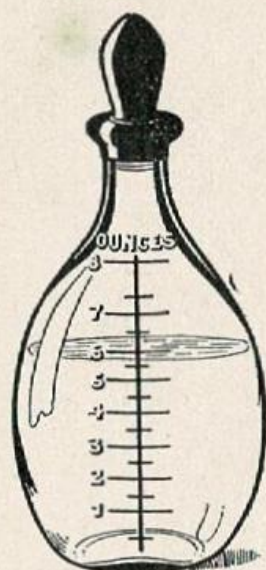
1. **Diet for Infants.** Natural feeding is best up to 9 months. The best substitute is humanized milk, that is, cow's milk made as like human milk in constituents as possible. The constituents of humanized milk are top of new milk (set from 4 to 7 hours), whey, lime water, sugar of milk, and boiled water.

Feed regularly, only six times in the 24 hours, with intervals of 3 hours between feedings in the daytime, and no food during the night, say between 9 p.m. and 5 a.m., or 10 p.m. and 6 a.m. Water for drinking must first be boiled. A teaspoonful of this water at 100° F. may be given if baby is thirsty, or if he cries in the night. At the age of three months a dessert-spoonful of the juice of a sweet orange mixed with a little warm (boiled) water and sugar may with benefit be given several times a week. The quantity may be gradually increased as the child grows older.

Until a child is about six months old it cannot digest starchy foods as there is no action of the saliva until the teeth begin to appear. When one year old bread crumbs and gravy, milk puddings, etc., may be given; when the teeth are cut more solid foods are allowed.

Care of baby's bottle.

1. Use a bottle all the parts of which are easily cleaned; also rubber teats that can readily be turned inside out. Never use a bottle with a long rubber or glass tube.
2. Immediately after use rinse with cold water, then wash with hot water and soda, and finally rinse with clean boiled water.



Baby's feeding bottle.

3. Bake or boil the bottle, and keep it turned upside down, or covered till again required; or immerse in cold boiled water to which a little borax has been added.
4. Scald rubber teats once a day with boiling water, rinse inside and out with warm water, and rub with common salt.
5. Rinse with clean hot water 100° F.
6. Dry in recently baked sawdust or in a covered warm place, and store in a small covered box or jar.

2. Diet for children. Children are growing rapidly and are usually very active. There is both growth and wear and tear to supply; therefore they need a fair amount of nitrogenous foods. Meals should be regular and simple, plenty of milk, milk puddings, porridge, fruit and vegetables, as well as soft-boiled eggs, soups, fish and meat in moderation. New bread, pickles, highly seasoned foods, rich cake, pork, and veal, tea and coffee are not at all suitable. Most children of school age dislike fats, so the necessary heating foods may be given as butter or as suet in puddings, while sweets, such as jam, treacle, honey, etc., may be given to make up the deficiency in carbonaceous foods. Never allow children to eat between meals, as it is bad for the digestive organs, and spoils the appetite for the necessary wholesome food. They should be taught to chew their food thoroughly.

RECIPES.

BREAD AND MILK.

Stale bread, cut into dice, Milk (boiling), $\frac{1}{2}$ pint.
 $\frac{1}{4}$ pint. Sugar, to taste.

1. Pour boiling milk over bread in basin.
2. Cover with a plate for two minutes.
3. Add sugar to taste, and serve.

ARROWROOT GRUEL.

Arrowroot, 1 dessertspoon.
Milk, $\frac{1}{2}$ pint.

Sugar, 1 teaspoon.

1. Mix the arrowroot to a smooth paste with a little of the milk.
 2. Put the remainder of milk on to boil.
 3. Stir the mixed arrowroot into the boiling milk.
 4. Add the sugar and stir till it thickens.
 5. Pour into cup and serve.
-

LESSON XIX.**I. VEGETARIAN COOKERY.**

Some persons avoid the use of meat as food because it involves the slaughter of animals, others because they think it does not suit their digestion or their mode of life. As the diet of such persons must consist largely of vegetable foods they are called vegetarians. The only animal foods they will take are milk, butter, cream, cheese, and eggs. These substances, together with cereals, vegetables, fruit, and nuts are sufficient to provide a variety of dishes supplying all the necessary food constituents. A vegetarian diet has the advantage of being more economical than a meat diet. The recipes for vegetarian dishes fall into the following classes:—egg dishes, sauces, cereals, savoury vegetable dishes and salads, fruits, soups, and sweets.

RECIPES.**GROUND RICE MOULD.**

Ground rice, 1 oz.

Sugar, 1 dessertspoon.

Raisins, 1 oz.

Salt, a pinch.

Milk, $\frac{1}{2}$ pint.

Ess. of Lemon, a few drops.

1. Mix ground rice with a little cold milk.
2. Put remainder of milk on to boil, with the sugar.
3. Stir in the ground rice and raisins, and boil for five minutes, stirring all the time.
4. Pour into a wetted mould, turn out when set.

HARICOT BEANS.

1. Soak the beans in cold water over-night.
2. Put on to boil with sufficient cold water to well cover them.
3. Cook until tender, but not broken, about $1\frac{1}{2}$ hours.
4. Drain and serve with parsley sauce poured over them.

LENTIL PIE OR VEGETARIAN MEAT PUDDING.

Lentils, $\frac{1}{2}$ lb.

Breadcrumbs, 1 oz.

Butter, 2 ozs.

Eggs, 3.

Salt, 1 teaspoon.

Mint (chopped), 1 teaspoon.

Parsley (chopped), 1 teaspoon.

Pepper, a seasoning.

Onion, 1.

1. Boil the lentils and onion in very little water till soft.
2. Strain off any water, then mash the lentils through a colander and remove any husks.
3. Mix all ingredients with the lentil pulp; break in the eggs without beating; season carefully.
4. Press the mixture into a buttered pie dish or casserole.
5. Sprinkle over with some brown bread crumbs and bake in a hot oven 1 hour. Serve hot.

LESSON XX.**I. LAYING THE TABLE.** See page 61.

Flowers should be small, delicately coloured, not too strongly scented, and be tastefully arranged, but the vases should not be allowed to occupy too much room.

II. CLEARING AWAY.

1. Remove each course (dishes, soiled plates, etc.) as finished.
2. Collect articles of same kind together, and remove on trays to scullery.
3. Return articles taken from pantry or sideboard.
4. Brush crumbs from tablecloth, fold it, and spread table cover, if removed.

To fold table-cloth.

Fold in original creases as mangled or ironed.
See Laundry Work, page 90.

RECIPES.**MINCE PIES.**

Pastry, flaky or puff. Mincemeat.

1. Roll out pastry and cut into rounds.
2. Line some patty pans with it and fill with a teaspoonful of mincemeat.
3. Wet the edges and cover with another round of paste.
4. Make a hole in the centre and decorate the edges.
5. Bake in a very hot oven for twenty minutes.

MINCEMEAT.

Apples, $\frac{1}{2}$ lb.	Suet (chopped), $\frac{1}{2}$ lb.
Seeded raisins, 6 ozs.	Ground ginger, 1 dessertspoon.
Sugar, 6 ozs.	Mixed spice, 1 dessertspoon.
Currants, 6 ozs.	Lemon, 1, rind and juice.
Figs, $\frac{1}{4}$ lb.	

1. Peel, core, and chop the apples finely.
2. Clean the currants and mince the figs, cut the raisins.
3. Mix everything well together.
4. Keep in a covered jar.

PLUM PUDDING.

Flour, $\frac{1}{4}$ lb.	Sugar, $\frac{1}{4}$ lb.
Breadcrumbs, $\frac{1}{4}$ lb.	Lemon, 1, rind and juice.
Suet (chopped) $\frac{1}{2}$ lb.	Eggs, 3.
Currants, $\frac{1}{4}$ lb.	Milk, to mix.
Sultanas or raisins, $\frac{1}{2}$ lb.	Salt, a pinch.
Mixed peel, $\frac{1}{4}$ lb.	

1. Slice the peel finely, clean the currants and sultanas.
 2. Mix all the ingredients well together.
 3. Stir in the beaten eggs and sufficient milk to make the mixture rather moist.
 4. Boil in a well-greased pudding basin for about four hours.
-

COURSE III.

LESSON I.

I. GENERAL ECONOMIES.

Money may be saved by

1. Doing without small comforts, *e.g.*, unnecessary clothing, articles of luxury, spirits, tobacco, tea, etc.
2. Doing with fewer and cheaper amusements.
3. Eating less—just enough to maintain health and strength. For example, exercise stimulates appetite, and exercise for pure pleasure might be reduced to what is absolutely necessary for health.
4. Eating cheaper food of same food value as the dearer. For example, to supply protein, less meat and more milk, cheese, bread, oatmeal, peas, beans, and lentils. Meat is a relatively dear form of protein.

Patent cereal breakfast foods are usually dearer than plain oatmeal.

More rice should be eaten, particularly as boiled rice served with meat and cheese.

Except in favoured localities fresh fish is rarely a cheap food. Tinned fish are extravagant foods. Potatoes are cheap sources of energy, as are artichokes, carrots, and onions.

So long as the fat is eaten and not left on the family plates, fat meat is more economical than lean meat, because fat has replaced water. See page 112.

5. Paying special attention to skilful marketing.
6. Raising one's own foodstuffs: vegetables, fruit, eggs.
7. Using all left-overs.

II. TO ECONOMISE GAS. (See page 59).

1. Always have a match or taper lighted before turning gas taps on.
2. Fill kettle before you light the gas.
3. Use tapers for lighting from one jet to another.
4. Do not let the flame come up the sides of cooking utensils.
5. Use thin asbestos mat when cooking with two pots on one jet.
6. Use the small burner or simmerer for stewing, etc.

III. COMPARISON OF COAL, GAS, OIL, AND ELECTRIC COOKERY.**1. The Advantages of a Coal Range.**

- (a) Heats the water as well as cooking various dishes.
- (b) Many things may be cooked at once.
- (c) It warms the room in winter.

Disadvantages.

- (a) A coal range makes the utensils dirty.
- (b) It makes the kitchen too hot in summer.
- (c) It takes a great deal of cleaning.

2. The Advantages of a Gas Stove.

- (a) The utensils are not made so dirty.
- (b) The heat is easily regulated.
- (c) A meal may be cooked over one gas jet.

Disadvantages.

- (a) In winter the room is not warm.
- (b) There is an offensive smell of gas if no outlet is provided.
- (c) Careless consumers waste gas.

3. Advantages of Oil Stoves.

- (a) Very convenient where gas is not obtainable.
- (b) They are easy to carry about.
- (c) They are inexpensive.

Disadvantages.

- (a) If not carefully handled they may explode.
- (b) Only light utensils can be used.
- (c) The wick must be trimmed before use.

4. **Advantages of Electric Stoves.**

- (a) Heat can be turned on and off at will.
- (b) Heat being sent direct to oven leaves kitchen cool.
- (c) Absence of fumes, smoke, soot, or ashes; hence pleasant to use and easy to keep clean.
- (d) Even distribution of heat removes danger of burning food.
- (e) Safe to use, and free from danger of explosion.
- (f) First cost and maintenance no higher than with other stoves.

Disadvantages.

- (a) No hot-water supply.
 - (b) Unless special attachment is provided plates and dishes must be heated in the oven.
-

III. RULES FOR BOTTLING FRUIT OR VEGETABLES.

1. Choose perfectly sound and not too ripe fruit.
2. Use wide mouth glass jars with screw metal tops.
3. Procure fresh rubber rings every season.
4. Have the bottles tested before using, and while filling stand them on a folded towel.
5. Pack the jars with the fruit, then fill to overflowing with boiling syrup or water.
6. Screw on the lids, place them in a boiler or fish kettle on straw or a folded towel, taking care the bottles do not touch.
7. Fill the boiler nearly full with cold water and bring to the boil.
8. Let the water boil gently for about 8 minutes or until the fruit shows signs of cracking.
9. If the fruit sinks in the bottle, fill from another bottle or add syrup or boiling water.
10. Screw the tops down again next day, as glass contracts on cooling.

Note.—Bottles must be filled to overflowing to exclude all air. If necessary, run a silver spoon round the mouth of the jar before sealing, in order to break any air bubbles.

To make the Syrup.

To each quart of water allow $\frac{1}{2}$ lb. sugar. Boil for 20 minutes; skim well.

Fruit may be preserved equally well in boiling water, though the flavour is not so good. This is a good method for tomatoes. For vegetables, as peas and beans, allow 1 oz. of salt to 1 quart of water.

Another method of Bottling.

Cook the fruit in syrup till tender, a small quantity at a time, then bottle immediately.

Difference between a preserve and a conserve.

A **preserve** consists of fruit cooked with sugar to preserve it for future use, such as jam, jelly, marmalade, and bottled fruit. The term is also extended to bottled vegetables.

A **conserve** is a preserve made from a mixture of fruits with or without the addition of some other food, such as nuts.

LESSON II.**I. PLANNING OF BREAKFASTS.**

Breakfast is a preparation for the day's work; so make it specially dainty and appetising. Set the table neatly, and serve the meal punctually so that all have time to enjoy it. Breakfast cookery is generally of the simplest character on account of the early hour at which it has to be served, but with a little forethought a sufficient variety of simple dishes can be provided.

1. Toast, either dry or buttered, should be carefully made.
2. Special care should be given to the making of tea and coffee. See page 158. Coffee is usually served with milk for breakfast.

3. Porridge should always be served, as with milk it provides all the nourishment for the body, and is especially good for children.
4. Dishes like fish cakes, rissoles, croquettes, etc., can be prepared the night before.
5. Eggs and bacon, kidneys, or liver and bacon, are good combinations for breakfast.
6. Variety can be introduced with the kind of bread provided, white or brown, toast, scones, rolls, oatcake, etc., eaten with butter, jam, honey, or marmalade.
7. Fruit, either fresh, baked, or stewed, should be on the table when possible.

Suggestions for a Week's Breakfasts.

Each day there should be fruit, porridge, bread (white or brown), toast, scones, butter, jam, marmalade, tea, or coffee. Boiled or baked potatoes left over from each day's dinner may be fried for next day's breakfast. The other course might be:—

Sunday—Fried sausages.

Monday—Bacon and mushrooms, or savoury omelet.

Tuesday—Liver and bacon, or grilled kidneys.

Wednesday—Rissoles, or savoury meat toast, or potted meat.

Thursday—Ham, or sardine toast.

Friday—Kedgerie, fish cakes, or fried filleted fish.

Saturday—Poached or scrambled eggs.

RECIPES.

WHEATMEAL PORRIDGE.

Wheatmeal, 2 ozs.

Salt, $\frac{1}{2}$ teaspoon.

Boiling water, 1 pint.

1. Sprinkle wheatmeal into boiling water, stirring all the time till the mixture thickens.
2. Put lid on pot, cook gently for 1 hour.
3. Serve in a soup plate with sugar and milk.

GRILLED HERRINGS.

1. Remove the heads and tails from fish, split them open, and take out the bones.
2. Fill with a little forcemeat, close, and brush over with melted butter.
3. Grill over a steady fire for two or three minutes; turn and grill the other side.
4. Dish on a hot dish, garnish with a little cut lemon and parsley.

STEWED KIDNEYS.

Sheep's kidneys, 4.

Flour, 1 oz.

Dripping, $\frac{1}{2}$ oz.

Pepper and salt.

Stock or water, $\frac{3}{4}$ pint.

1. Remove skin from kidneys and wash in salt and water.
2. Dry and cut into halves.
3. Toss in the flour, and fry a golden brown in the dripping.
4. Add the stock and simmer gently for 10 minutes.
5. Thicken with remainder of flour, and serve on a hot dish with a border of mashed potato, or with toast.

TOAST.

1. If a gas stove is used place slices in toaster, dry thoroughly and turn so as to toast a golden brown on both sides. The starch is changed into dextrine and made more easy of digestion.
2. If a coal fire is used, have a mass of red hot embers without flame or smoke. Dry slices in the oven, and proceed as above, browning one side at a time on a fork or in a toaster.

LESSON III.**I. PLANNING OF DINNERS.**

See "Planning of Daily Meals," on page 119.

The dinner is the most elaborate and solid meal of the day, and on this account requires greater labour and more extensive preparations. Plan dinners several days ahead. Points to consider other than those already mentioned are—

1. No food should appear twice at a meal, *e.g.*, apple sauce and apple pie. Sauces and garnishes should be different in colour and character.

2. The methods of cooking should be varied. Two fried dishes should not follow each other.
3. A rich dish should be followed by a plain one.

Three Dinners for Summer.

1. Clear soup. Roast lamb, with peas or beans, potatoes, mint sauce, fruit tart.
2. Boiled fish, parsley sauce, cold lamb, salad, and potatoes, milk pudding, savoury.
3. Green pea soup. Meat pie, spinach or green peas, and potatoes, stewed fruit and custard.

Three Dinners for Winter.

1. Lentil soup. Roast beef, cabbage, baked potatoes, Yorkshire pudding, cabinet pudding.
2. Boiled cod, with oyster or egg sauce. Cold beef, with beetroot, or horse-radish sauce, savoury.
3. Potato soup. Roast pork, apple sauce, cauliflower, macaroni cheese.

II. HOW TO PACK A PORTABLE DINNER.

Nothing more elaborate than a two-course dinner could be attempted. If intended for one person, two vessels, either enamelled basins or pots, will be required, and three if the meal is to supply several persons. The basins must fit one into the other, the top one having a tight lid. The whole when filled may be slipped into a thick kapoc-lined bag specially made to keep in the heat. The lower basin will contain the meat (and gravy) ready carved, and also the vegetables if intended for one person only; the upper basin should be reserved for the pudding. For hot fluids (tea without milk, or soup) a Thermos Flask may be used. For one hot course, a hot water plate, filled with boiling water, and covered with a hot basin, does very well. The cook's object should be to serve a meal that will reach the diner in a piping hot state, and as fresh looking as possible.

RECIPES.**TOMATO SOUP.**

Tomatoes, 1 lb.	Dripping or butter, 1 dessertsp.
Stock, 1 pint.	Cornflour, 1 dessertspoon.
Carrot, 1 small.	Sugar, a pinch.
Onion, 1 small.	Pepper and salt, to taste.

1. Prepare and then slice the tomatoes and vegetables.
2. Cook them for a few minutes in the dripping.
3. Add stock and simmer till tender.
4. Rub them through a colander, or sieve, and return to saucepan.
5. Mix cornflour with one tablespoonful cold water and stir into hot soup.
6. Boil five minutes, add seasoning, and serve.

CALF'S HEAD.

Half a calf's head.	Pepper and salt.
Carrot, onion, turnip.	Water or stock, 1 pint.
Bunch of herbs.	Parsley sauce.

1. Soak the head in cold water for an hour and a half.
2. Put into a saucepan with the water and vegetables.
3. Simmer gently for 2 hours.
4. Dish and cover with parsley sauce.

JAM PUDDING.

Jam, 2 tablespoons.	Sugar, $\frac{1}{2}$ breakfast cup.
Butter, 1 tablespoon.	Baking powder, 1 teaspoonful.
Flour, 1 breakfast cup.	Milk, about $\frac{1}{2}$ breakf. cup.

1. Sift flour and baking powder together.
2. Cream butter and sugar.
3. Add jam, flour, and enough milk to make the consistency of a light cake.
4. Put mixture into a greased basin.
5. Cover with a greased paper and steam $1\frac{1}{2}$ hours.
6. Serve with jam sauce.

JAM SAUCE.

Jam, 2 tablespoons.	Sugar, 2 ozs.
Lemon juice, 1 teaspoon.	Carmine or cochineal, to colour.
Water, $\frac{1}{2}$ pint.	Cornflour, 1 teaspoonful.

1. Boil sugar and water together for five minutes.
2. Add jam and lemon juice and simmer two or three minutes.
3. Strain, then thicken with the cornflour previously mixed with a little cold water.

CUP PUDDING.

Flour, 1 cup.	Jam, 1 cup.
Suet, chopped fine, 1 cup.	Soda, 1 teaspoonful dissolved in
Raisins, 1 cup.	a little warm milk.
Sugar, 1 cup.	Egg, 1.
Breadcrumbs, 1 cup.	

1. Mix all ingredients well together.
2. Put into a greased pie dish.
3. Bake in a hot oven and serve with a pudding sauce.

ARROWROOT SAUCE.

Milk or milk & water, $\frac{1}{2}$ pint.	Sugar, 1 tablespoon.
Arrowroot, 1 dessertspoon.	Vanilla, a few drops.

1. Put half the milk in a saucepan with the sugar and vanilla.
2. Mix cornflour with the rest of the milk; stir it into the hot milk and cook a few minutes, stirring all the time.

LESSON IV.**I. BEVERAGES.**

A beverage is anything that we drink, either to quench our thirst or to stimulate and refresh us. A stimulant is a beverage (or medicine) which increases for a time the activity of any of the bodily organs or excites the nervous system.

The beverages in common use are:—Water, milk, tea, coffee, cocoa, chocolate, and what are known as soft drinks. Water and milk may be called natural beverages.

1. Tea.

Tea is the dried leaf of a shrub grown chiefly in China, Japan, India, and Ceylon.

Composition. The most important substances in tea are theine, which gives to tea its stimulating properties, and tannin, an astringent, which acts on the nervous system and retards digestion.

Food Value. Tea has no food value, but is used for its stimulating effect on the nervous system. If taken in excess or too strong it may cause indigestion.

2. Coffee.

Coffee is prepared by roasting and grinding the berries of the coffee tree, which is grown chiefly in Brazil, Central America, East and West Indies, Arabia, Southern India, and Ceylon.

Composition. Coffee contains a stimulating substance called caffeine, which resembles theine in tea. It also contains tannin. Coffee is frequently adulterated with chicory, a root which contains a bitter juice. It is not unwholesome, and some people consider its flavour an improvement.

Food value. Coffee has no food value, but is a useful stimulant, and is often given to invalids. For most persons coffee taken after a meal has a beneficial effect. Children should never be given either coffee or tea, as they do not need these stimulants.

3. Cocoa.

Cocoa and Chocolate are prepared from the seeds of the cacao tree, which is grown chiefly in the West Indies, Mexico, and northern parts of South America.

Composition. The principal constituents of cocoa are fat 50%, nitrogenous substances 18%, and starch 10%. Cocoa also contains a substance called theobromine, which is similar to caffeine, but not quite so stimulating.

Food value. The food value of cocoa is derived from the fat, nitrogenous matter, and starch it contains. Cocoa is much more nutritious than tea or coffee, and is to be recommended in cases where a nourishing, heat-giving diet is required. It is very warming in cold weather, and is suitable for invalids and children. It does not agree with some people on account of the amount of fat it contains.

4. Difference between an infusion and a decoction.

An **infusion** is the liquid obtained by steeping a substance in water (usually boiling) in order to extract some of its soluble constituents, *e.g.*, tea, coffee.

A **decoction** is the liquid obtained by boiling a substance to extract all its soluble constituents, *e.g.*, beef tea.

5. Alcoholic or Intoxicating Beverages. See next lesson.

RECIPES.

TO MAKE TEA.

The teapot should first be heated with boiling water, then 1 teaspoon of tea allowed for each person, and freshly boiled water poured on to it. Tea should not be allowed to stand for more than 3 or 4 minutes, or too much of the harmful tannin will be extracted. Put milk into the cups before pouring the tea.

COFFEE.

Coffee (freshly roasted), 1 dessertsp. Hot milk, 1 teacup.
Boiling water, $\frac{1}{2}$ pint.

1. Rinse coffee pot with hot water.
2. Put coffee into pot and pour boiling water over it.
3. Put the lid on and let it stand by the fire for five minutes.
If allowed to boil for more than a minute much of the tannin will be extracted, which will make the flavour strong and bitter.
4. Pour coffee into cups, add milk.

COCOA.

Cocoa, 1 teaspoon. Milk, 1 teacup.
Boiling water, 1 teacup. Sugar, to taste.

1. Mix cocoa to a paste with a little of the milk.
2. Pour boiling water on, add milk and sugar.
3. Put all into a saucepan and boil two minutes.
4. Pour into cups.

HOP BEER.

Water, 3 gallons. Hops, $\frac{1}{4}$ lb.
Brown sugar, $3\frac{1}{2}$ lbs. Yeast, 3 tablespoons.

1. Boil the hops in a little of the water for half an hour.
2. Add the sugar, and stir.
3. Strain into a small barrel, add the rest of the water and the yeast.

4. Leave for five days, skimming each day, and adding 1 cup of hot water and 1 tablespoon of sugar.
5. Strain and bottle, and tie down the corks.

GINGER BEER.

Sugar, 3 lbs.	Yeast, 1 dessertspoon.
Bruised ginger, $\frac{1}{4}$ lb.	White of 1 egg.
Cream of tartar, $1\frac{1}{2}$ ozs.	Boiling water, 2 gallons.
Lemons, juice of 3.	

1. Boil ginger for 20 minutes in the water.
2. Add sugar, lemon juice, and strain.
3. When cool add the cream of tartar, yeast, and white of egg.
4. Stir well, and let stand for 12 hours.
5. Bottle and cork well.

LEMON SYRUP.

Sugar, 2 lbs.	Citric acid, 1 oz.
Water, 2 pints.	Ess. of lemon, 1 teaspoon.

1. Boil the sugar and water for 15 minutes.
2. Add the acid and let it dissolve.
3. Strain through muslin into a basin and add the lemon essence.
4. Bottle when cold and cork tightly.

LESSON V.

I. MANAGEMENT OF PANTRY.

See Course I., Lesson V., page 21.

1. **To keep milk:**—(a) Buy from a clean source. (b) Have jugs perfectly clean. (c) Scald for short time at 160° F., or sterilize (page 164), or pasteurize (heat to 180° F. for 20 mins., then cool rapidly to below 50° F.). (d) Never mix new with old. (e) Keep covered with gauze or muslin. (f) Stand in cold water, or on concrete in cool, shady place. (g) Keep away from strong smells.
2. **To keep butter:**—Keep clean, cool, covered, and away from strong smells.
 - In hot weather:—(a) Wrap in wet, cold cloths.
 - (b) Sink in cold water, and lower into an old

well, or place in a cool cellar; or (c) put in a porous earthenware butter-cooler, or soak a clean large flower-pot and invert over the butter.

For winter use:—(a) Put a thick layer of butter in a stone jar. (b) Cover with a thin layer of salt. (c) Repeat this till the jar is full. (d) Before using the butter wash well in cold water.

3. **To keep meat:**—(a) Uncover and keep in a cool, fly-proof safe. (See page 45). (b) If required to keep long sprinkle with pepper or place in brine. (c) Before cooking wipe well with damp cloth. (d) If the least bit tainted wipe with cloth wrung out of weak Condyl's fluid or vinegar.
-

II. ALCOHOLIC OR INTOXICATING BEVERAGES.

These drinks all contain **alcohol** or **spirits of wine**, and are stimulants. They are beer, stout, porter, wines, gin, whisky, brandy, and rum.

1. Description and source of alcohol.

Alcohol is a pale, inflammable fluid, lighter than water, of strong pleasant scent, made from barley or from grape juice by fermentation. Pure alcohol is a poison. When prepared for burning in spirit-lamps, and for making varnishes, wood spirit is mixed with it to make it undrinkable. It is then called **methyated spirit**.

2. Composition of alcoholic beverages.

Most beverages contain more water than anything else. The proportion of alcohol varies from 4 to 8% in beer, from 10 to 25% in wines, and from 37 to 43% in ardent spirits (gin, brandy, whisky, and rum).

3. Effects of alcohol.

(a) Stimulating in small doses. First effect is to raise bodily temperature and quicken heart-action. This soon passes away and gives

place to languor and sense of chill. Alcohol does not "keep out the cold."

- (b) In larger quantities is intoxicating and degrading.
- (c) Continued use injures brain, blood-vessels, heart, liver, kidneys, and stomach.
- (d) Lessens brain power, and muscular energy. Non-drinkers or teetotalers are capable of much greater endurance than those who indulge in alcohol.

4. Use and Abuse of Alcohol.

- (a) Used much less than formerly as a medicine. Still used by doctors as a restorative, as an aid to digestion, and to promote sleep.
- (b) Alcoholic beverages used by many people the world over, without abuse.
- (c) Some persons seem unable to resist excessive use. Abuse of alcohol leads to sickness, poverty, misery, crime, insanity, and death, and injures not only the individual but his relatives and the community.

Most people are better without alcohol; therefore it is a luxury, and money spent on it is waste. Alcohol saps the strength of man, and is the greatest enemy of industry. As its use so often leads to evil it is safest to abstain from it altogether. For these reasons the use of alcoholic beverages was discouraged at an early stage of the Great War.

RECIPES.

COLCANNON.

Cooked cabbage, 1 cupful.

Salt and pepper, to taste.

Cooked potatoes, 1 cupful.

Egg, 1.

Butter or dripping, 1 oz.

A few brown crumbs.

1. Chop the cabbage finely, and mash the potatoes.
2. Melt butter in saucepan and add cabbage, potato, seasoning, and beaten egg.
3. Mix well and put into a greased basin lined with some brown crumbs.

4. Bake in a good oven until firm to the touch.
5. Turn out and serve.

MACARONI AND MEAT SHAPE.

Any kind of meat, minced, 1 breakfast cup.

Macaroni, 2 ozs.

Salt and pepper, to taste.

Parsley, chopped, 1 teaspoon.

Stale bread, 1 thick slice.

Thyme, $\frac{1}{2}$ teaspoon.

Egg, 1.

Cold white sauce or cold gravy, 2 tablespoons.

1. Cook macaroni in boiling salted water till soft, strain, and cut into neat pieces.
2. Grease a basin with dripping, line it with the macaroni.
3. Soak the bread in cold water, then squeeze dry in a cloth.
4. Mix all ingredients well together.
5. Press the mixture into the prepared basin, cover with a lid or buttered paper, and steam 1 hour.
6. Turn out and serve with gravy.

CAULIFLOWER AU GRATIN.

Cauliflower, 1.

Flour, 1 heaped tablespoon.

Milk, $\frac{1}{2}$ pint.

Salt and pepper.

Butter, 1 level tablespoon. Grated cheese, 3 ozs.

1. Cook the cauliflower in boiling salted water for half an hour or until tender.
2. Drain it, put into a pie dish, and press into a round shape. Keep hot.
3. Melt butter in saucepan, add flour, then milk.
4. Stir till the sauce thickens; cook two or three minutes.
5. Add 3 parts of cheese and seasoning, and pour over cauliflower.
6. Sprinkle remainder of cheese on top.
7. Brown under griller or in a sharp oven.

LESSON VI.

I. ADULTERATION OF FOODS.

Definition. Adulteration of a food is the addition to it of foreign cheaper substances with the purpose of cheapening the cost to the seller, or of improving the flavour or colour, or of concealing staleness. Beyond a certain point that is fixed either by custom or by law, adulteration is a fraud upon the consumer. In New Zealand the public is safeguarded by the Pure Foods Act.

Examples of Adulteration.

Bread. Addition of too much potato.

Milk. Addition of water or preservative acid, such as boric acid, formalin, or salicylic acid, all of which are especially harmful to infants.

Butter. Too much water, or addition of margarine, or too much colouring matter, *e.g.*, annatto.

Coffee. Addition of roasted chicory, acorns, cereals, peas, beans, and parsnip roots, or of tea dust.

Pepper. Addition of inferior grain, husks of seeds, etc.

Cream of tartar. Addition of any acid powder, tartaric or citric acid.

Icing sugar. Addition of starch.

RECIPES.**BEEF OLIVES.**

Top side of beef, $\frac{1}{2}$ lb. Flour, 1 dessertspoon.

Force meat.

Breadcrumbs, 2 ozs.

Seasoning, pepper, salt, thyme.

Chopped suet, 1 oz.

Milk, a little.

Chopped parsley, 1 dessertsp. Water or stock, 1 teacup.

1. Have steak cut into thin slices about 3in. long, 2in. wide.
2. Mix the crumbs, suet, parsley, and seasoning.
3. Bind with egg or milk.
4. Spread a little of the forcemeat on each slice of meat.
5. Roll up, tie with thread, and roll each one in flour.
6. Fry rolls in smoking fat till lightly browned on both sides.
7. Strain the fat off, add the water or stock.
8. Stew gently about one hour.
9. Lift out olives, and remove thread.
10. Thicken gravy with the flour, season, and pour over olives.

GINGERBREAD.

Flour, 8 ozs.

Gold. syrup, 3 level tablespoons.

Butter or dripping, 3 ozs.

Milk, about $\frac{1}{4}$ teacup.

Brown sugar, 1 oz.

Nuts, (almonds, or peanuts), $\frac{1}{2}$ teacup.

Ginger, $\frac{1}{2}$ teaspoon.

A few dates or figs, cut small.

Cinnamon, $\frac{1}{4}$ teaspoon.

Soda, $\frac{1}{4}$ teaspoon.

1. Put all dry ingredients into a basin except the soda.
2. Melt the dripping and treacle together.

3. Pour it into the dry ingredients; stir together.
4. Dissolve the soda in the milk and stir it into the mixture.
5. Put the mixture into a greased and papered tin; bake $\frac{3}{4}$ hour.

SPONGE ROLL.

Flour, 3 ozs.

Sugar, 4 ozs.

Eggs, 2.

Boiling water, 1 tablespoon.

Cream of tartar, $\frac{1}{2}$ teaspoon.

Soda, $\frac{1}{4}$ teaspoon.

1. Sift flour, cream of tartar and soda together.
2. Beat eggs and sugar together till light and thick.
3. Add flour quickly, lastly the boiling water.
4. Pour into a greased and floured tin.
5. Bake in a quick oven about 7 minutes.
6. Turn on to a piece of sugared paper.
7. Spread with warmed jam.
8. Roll up quickly.

LESSON VII.

I. STERILIZATION.

Sterilization is the process of destroying all bacteria or living organisms in or on any food substance such as milk, fruit, and meat. This is done by the application of heat, and if the food is to be kept sterile, complete exclusion of air must immediately follow.

Sterilization differs from pasteurization (see page 159) which is the process of killing not all the living organisms in milk, but only the most dangerous disease germs, especially those of tuberculosis.

To sterilize milk or water. Sterilization of milk is most thoroughly carried out in a special oven by raising the temperature to 250° F., and maintaining it for 2 hours. This plan is not possible in the home. The only method available to the average housekeeper is sterilization by boiling.

Sterilizing by boiling. Raise and maintain at boiling point for 15 to 20 minutes. Repeat the

process after cooling to make the result certain. (Some people dislike the colour and flavour of boiled milk, and it is also probably less digestible than fresh. Pasteurized milk, however, is free from objection, as the colour, flavour, and digestibility are not affected.)

To sterilize fruit and vegetables. This may be done by intermittent cooking. All germs that survive or come to life after a first boiling are killed by the time a second cooling and a third heating have been carried out. Bottles of fruit and vegetables so treated must be sealed after the second heating.

Sterilization is equally well effected by intense cold, as at freezing works, though this process is not available in the home.

The keeping of foods by the addition of harmless preservatives, such as sugar, salt, acetic acid, spices, and smoke is really a form of sterilization.

II. PREPARATION OF HERBS.

Fresh green shoots of thyme, sage, etc., should be plucked in the spring or early summer, washed clean, and after being shaken as dry as possible, tied in a paper bag, and hung in the sun or in a dry place for a week or two. When thoroughly dried, the leaves may be removed from the stalks and stored in the pantry ready for use.

RECIPES.

MILK ROLLS.

Flour, $\frac{1}{2}$ lb.

Butter, 1 oz.

Milk, $\frac{1}{4}$ pint.

Baking powder, $1\frac{1}{2}$ teaspoons.

Salt, $\frac{1}{2}$ teaspoon.

1. Sift baking powder, flour, and salt together.
2. Rub butter in with the tips of fingers.
3. Mix into dough with milk.
4. Turn dough on to floured board, cut into 4 equal pieces.
5. Form each piece into a small roll.
6. Bake in a quick oven about ten minutes.

WELSH RAREBIT.

Grated cheese, 2 ozs.

Butter, 1 oz.

Pepper and salt.

Mixed mustard, $\frac{1}{2}$ teaspoon.

A square of buttered toast.

1. Put all the ingredients together into saucepan.
2. Stir for a few minutes till the mixture is thick and soft
3. Pour over the buttered toast and serve very hot.

ALMOND FINGERS.Flour, $\frac{1}{2}$ lb.

Butter, 4 ozs.

Sugar, 2 ozs.

Egg, 1, yolk & white separated.

Baking powder, 1 teaspoon.

1. Beat butter and sugar to a cream.
2. Add yolk of egg, beat well.
3. Add flour and baking powder.
4. Mix with hand to a stiff paste.
5. Roll out thin on floured board.
6. Spread icing over the paste and sprinkle with chopped nuts.
7. Cut into fingers, and place on a cold greased oven shelf.
8. Bake a pale brown in moderate oven.

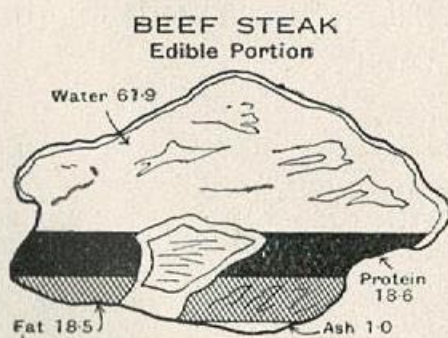
ICING.White of egg, $\frac{1}{2}$.

Icing sugar, 2 or 3 tablespoons.

Mix to consistency of thick cream and spread over biscuits.

LESSON VIII.**I. STUDY OF FOOD CHARTS.**

Food charts illustrate in a graphical way the



composition of various foods, and the relative amount of the various food constituents they contain. Every good cook requires to be familiar with the information they convey. The accompanying diagram shows the food value of beef.

For other foods see pages 42, 102, 103, 122.

Exercises.

- (1) Sketch a 4 lb. loaf of bread and mark on it roughly the following food values:—7.8%

protein, 1.2% fat, 52% starch and sugar, .8% ash, 35.3% water, 2.9% waste.

(2) Cheeses vary greatly in composition, though on the average they contain about $\frac{1}{3}$ each of protein, fat, and water. Draw a circle to represent a cheese and divide it roughly as follows:—Protein 29.7%, fat 29%, sugar 2.3%, mineral matter 3.5%, and water 35.5%.

RECIPES.

CUTLETS.

1. Trim the cutlets neatly.
2. Sprinkle with pepper and salt.
3. Make 1 oz. of dripping hot in frying pan.
4. Cook cutlets gently a golden brown, $3\frac{1}{2}$ minutes on each side.
5. Dish them, pour some good brown gravy round, and garnish with green peas.

ONION PIE.

Spanish onions, 5 or 6. Potato, 1 breakfast cup.
White sauce, $\frac{1}{2}$ pint.

1. Peel and wash the onions, cook till tender in boiling salted water.
2. Strain and cut into slices.
3. Put a layer of onion, a little white sauce, and layer of mashed potatoes in a pie dish.
4. Repeat this method till the dish is full. Finish with potatoes on top.
5. Make quite hot in the oven and serve.

LEMON PUDDING.

Water, 2 teacups. Cornflour, 2 tablespoons.
Rind and juice of 2 lemons. Sugar, 1 teacup.
Eggs, 2, yolks & whites septd.

1. Put water, sugar, lemon rind, and juice into a saucepan.
2. Bring to the boil and thicken with the cornflour previously mixed with a little cold water.
3. Boil for a few minutes. Cool a little, then beat in the yolks.
4. Pour into a dish, and pile stiffly beaten whites on top. Sago may be used instead of cornflour if liked.

LESSON IX.

I. THRIFT.

Definition. Thrift is the habit of spending no more than is necessary for health and moderate comfort. It is to be contrasted on the one hand with prodigality or waste, and on the other hand with meanness and miserliness.

Aids to saving. In New Zealand a great aid to saving is the Post Office Savings Bank, which will accept (and pay interest upon) deposits of amounts as small as one shilling, and encourages saving by those who are unable to save more than a penny or two at a time by providing forms to which they may attach new penny stamps, 12 of these being accepted on deposit as 1/-.

Children may best learn to save by cultivating habits of industry, and by learning to do without small pleasures, such as sweets and cheap amusements.

Revise also pages 131 and 148.

RECIPES.

EXETER STEW.

Shin of beef, 1 lb.	Water, sufficient for gravy.
Onion, 1 small.	Flour, 1 dessertspoon.
Carrot, 1 small.	Dripping, 1 dessertspoon.
Turnip, 1 small.	

1. Cut meat into neat pieces, trim off the fat.
2. Prepare the vegetables and cut them into thin slices.
3. Sprinkle the meat with the flour, and fry a nice brown in the dripping; add vegetables, seasoning, and water.
4. Cook gently until tender, about 2 hours.
5. Thicken the gravy with flour mixed with a little cold water.

APPLE FRITTERS.

Apples, 2.	Egg, 1, yolk & white separated.
Flour, 4 ozs.	Tepid water, 1 teacup

1. Peel, core, and cut the apples into thin slices.
2. Sprinkle with sugar.
3. Put the flour into a basin.
4. Beat the yolk of egg with the water.

5. Make into a smooth batter with the flour.
6. Add white of egg beaten to a stiff froth.
7. Dip the slices of apple into batter.
8. Fry a golden brown in deep fat.
9. Sift sugar over and serve.

Various Fritters, such as Banana, Orange, Apricot, etc., may be prepared in the same way as Apple Fritters.

Rice Fritters may be made of the remains of cold rice sweetened, dipped into batter in spoonful, and fried.

COFFEE CAKE (iced).

Flour, 5 ozs.	Golden syrup, 1 tablespoon.
Brown sugar, 2 ozs.	Nutmeg, $\frac{1}{4}$ teaspoon.
Butter, 3 ozs.	Bicarb. of soda, $\frac{1}{2}$ teaspoon.
Eggs, 2.	Warm milk, 1 teacup.
Coffee essence, 1 tablesp.	

1. Rub the butter into the flour, add the sugar and nutmeg.
2. Make a well in the middle of the mixture.
3. Dissolve the soda in the milk, and beat the eggs well.
4. Put milk, syrup, coffee essence, and eggs into the well in the flour.
5. Beat all lightly together.
6. Put into a tin lined with greased paper.
7. Bake in a moderate oven for about $1\frac{1}{2}$ hours.

COFFEE ICING.

Butter, 2 ozs.	Coffee essence, 1 dessertspoon.
Cold water, 2 tablespoons.	Essence of vanilla, $\frac{1}{2}$ teaspoon.
Sifted icing sugar, 4 to 6 tablesp.	

1. Put all ingredients together in a basin.
2. Mix well together with a spoon till thick and creamy.
3. Spread over the cake with knife dipped in warm water.

LESSON X.

I. PRECAUTIONS TO BE TAKEN IN THE USE OF TINNED FOODS.

Bacteria flourish in milk, cream, fruit, fish, and meat, and if these goods are not completely sterilized when tinned the bacilli come to life and produce a virulent poison known as **ptomaine**. Every precaution should be taken to avoid food poisoning. In particular, fish and meat should

always be removed from tins immediately on opening, and left-overs should not be kept till next day.

Tests for tinned food.

1. The top and bottom of tins should be sunken, not bulging.
2. There should be no unpleasant smell or taste on opening.
3. Before opening strike the lid with a thimble put on the second finger. The ear soon becomes accustomed to the ring of good tinned food.

II. COOKING WITH A FIRELESS COOKER.

Description. A fireless cooker* consists of a covered box lined with tin or zinc and packed between with felt or other non-conductor of heat. Within the box are food chambers or ovens, each with two radiators consisting of stone or iron discs which are heated and placed above and below the food to be cooked. The principle of the cooker is the same as that of a Thermos Flask, its efficiency depending almost entirely upon its success in retaining the heat imparted to the radiators.

How to use.

- (a) Heat the radiators over a fire, gas-ring, or lamp for 15 mins.
- (b) Place one above and one below each dish to be cooked.
- (c) Shut up tightly and leave for three or four hours to cook.
- (d) Stand the cooker in a warm place.
- (e) After use, wash, clean, and dry all parts and air them frequently.

Advantages.

- (a) Economy of fuel and labour, neither fire nor attention being needed.

- (b) Cleanliness.
- (c) No danger of fire, therefore can be left alone.
- (d) Food is tender and juicy, all goodness being retained and therefore no loss of weight.

Disadvantages.

- (a) Takes much longer time to cook.
- (b) Time allowed must suit the dish taking longest to cook.
- (c) The flavour of the food is not so good.
- (d) The food is not nicely browned.

RECIPES FOR SCOUTS' COOKERY.

HUNTERS' STEW.

1. Chop meat into small chunks $\frac{1}{2}$ in. or $1\frac{1}{2}$ in. square.
2. Scrape and chop up any potatoes and other vegetables and put into a billy.
3. Fill half full of clean water or soup.
4. Mix a little flour, salt, and pepper together, rub the meat in the mixture, and put into the billy.
5. Have just enough water to cover the food.
6. Stand the billy in the embers and simmer for about $1\frac{1}{4}$ hours. When potatoes are cooked, the whole is ready.

KABOBS.

1. Slice meat into thicknesses of $\frac{1}{2}$ in. or $\frac{3}{4}$ in.
2. Cut up into pieces $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. across.
3. String these on a stick or iron rod.
4. Plant in front of the fire, or hang over the hot embers for a few minutes till the meat is roasted.

DAMPER.

Flour, 1 lb.

A little salt.

Bicarb. soda, 1 teaspoon.

A little sour milk or buttermilk

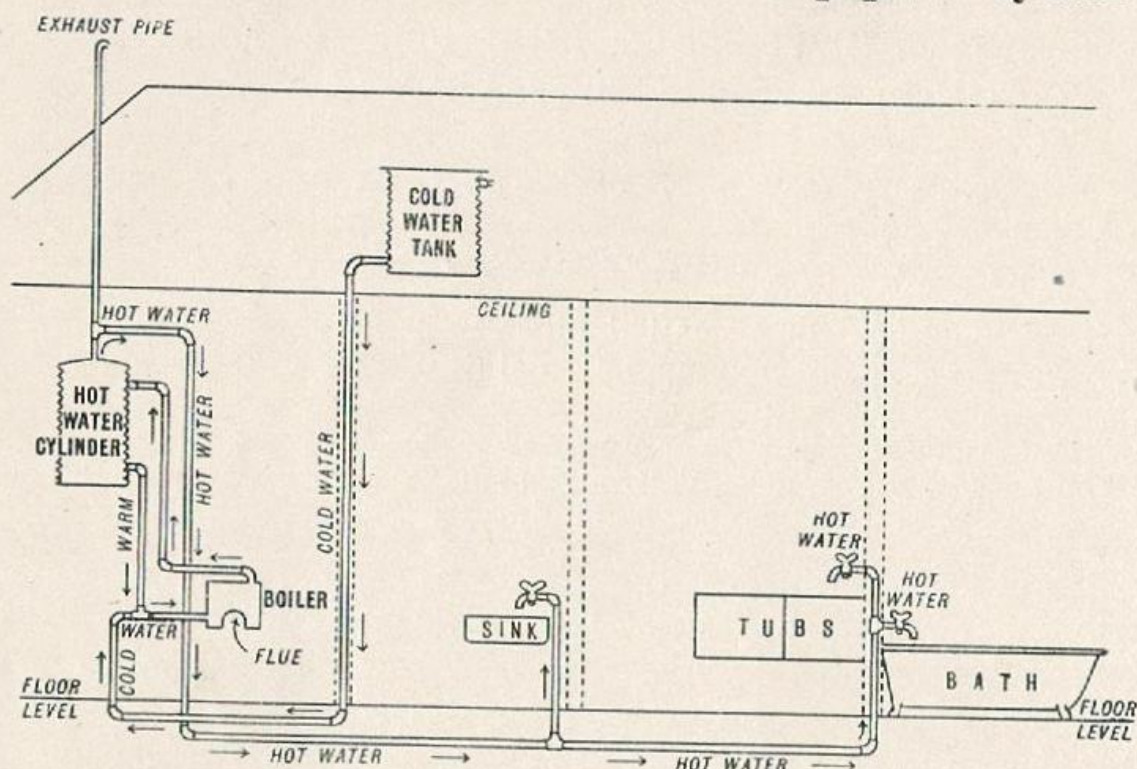
Clean fat or butter, 3 oz.


1. Mix flour, salt, and soda, and rub in the fat.
2. Mix with the milk into dough.
3. Break into 4 pieces and place on heated stones in an open fire, and cover with red hot wood embers.
4. Bake for half an hour; then if cooked remove from the fire and dust the crust.

LESSON XI.

I. DOMESTIC HOT WATER SERVICE.

No modern house is complete without a hot water service in connection with the kitchen range. Water so heated is made use of for bathing, washing, and cleaning, and hence is connected with bath, washing tubs, and kitchen sink. The most popular system



of hot water supply is called the cylinder system. The principles underlying this system may be easily understood from the accompanying diagram. The essential parts are (1) a cold water tank placed at a high level, either on or near the roof, (2) an iron boiler or arrangement of iron pipes to provide a large heating surface at the back of the fire grate, (3) a cylinder for storing hot water, and (4) the necessary pipe connections. The boiler is usually made of iron in the shape of a boot, thus , and forms the back flue of the range. The flame passes in at the toe and up the leg into the chimney, and warms the water in its passage. The water circulates as follows:—Cold water by pressure of gravi-

tation passes from the bottom of the tank into the bottom of the boiler, where it is heated, and passes out from the top of the boiler into the top of the cylinder, whence it leaves by a flow pipe which supplies the hot water taps over bath, tubs, and sink. The arrow heads in the diagram show the course of the water. Two natural laws govern the action of the water:—(1) Gravitation acts on the cold water in the tank, and (2) heat expands water, making hot water lighter than cold, so that it seeks the highest point it can reach. Because of the latter law, so long as there is fire enough in the grate there is constant circulation between boiler and cylinder, the cooler water in the latter passing out at the bottom and uniting with the cold on its way to the boiler. The exhaust (or expansion) pipe leading from the top of the cylinder which allows for the escape of steam, must of course be carried up above the level of the cold water in the tank. The cold water supply for the house comes direct from the tank by another pipe not shown in the diagram, or direct from the main.

II. PREPARATION OF A SIMPLE DINNER.

Suppose a simple two-course dinner for four grown-up persons has to be served at 12.30 p.m., consisting of

Colonial Goose (roast leg of mutton stuffed).

Baked potatoes and boiled cabbage.

Cottage pudding.

The following preparations will be necessary:—

1. Preparation of meat.

- (a) About 8.30 prepare stuffing: thyme, sage, onions, bread crumbs.
- (b) Wipe and trim joint, previously boned, stuff and place in baking tin with tablespoonful of dripping.
- (c) Put into hot oven about 9 o'clock for ten minutes, then cook more slowly.

2. Preparation of vegetables.

- (a) Peel or scrape potatoes, rinse, and place in dish with meat about 11.30.
- (b) Prepare cabbage as directed in recipe on page 20. Have it on boiling not later than 12 o'clock.

3. Preparation of pudding.

About 10.45 prepare pudding according to recipe on page 65, using double the quantities there given. Place in oven about 11.15.

LESSON XII.

I. RULES FOR CAKE-MAKING.

See page 60.

II. MAKING SWEETS.**1. Important requisites for sweet-making.**

- (a) A confectioner's thermometer or saccharometer, so that syrup may be removed from the fire at the right temperature. Before as well as after using wash the saccharometer in warm water.
- (b) For making fondants use a marble slab or a large meat dish.
- (c) Use a strip of strong tin (one end rolled up so as to form a handle) or a broad-bladed knife as a sugar scraper.
- (d) A dipping fork for lifting the sweet centres out of a coating mixture may be made out of a piece of twisted wire with two prongs.
- (e) Other requisites are colouring essences and flavourings, as well as waxed paper for wrapping sweets in, and grease-proof paper for putting the sweets on after they have been dipped.

2. Different properties of sugar at different temperatures.

Cane-sugar is the foundation of all sweets, and in sweet-making advantage is taken of the different properties exhibited by sugar at different degrees of temperature. Thus—

- (a) The first stage is **soft ball**, when a little melted sugar dropped into cold water may be rolled by the fingers into a soft ball.
- (b) The next stage is **hard ball**, when a similar procedure results in the formation of a hard ball.
- (c) A higher stage is when sugar forms a **thread** when dropped from a spoon.
- (d) Heated still further a **brittle** stage is reached, when sugar hardens and crackles on being dropped into cold water.
- (e) The fifth state is **caramel**, when heat turns the sugar brown.

3. Rules for sweet-making. See page 71.

RECIPES.

CHRISTMAS CAKE.

Flour, $\frac{1}{2}$ lb.	Currants, 1 lb.
Butter, $\frac{1}{2}$ lb.	Candied peel, $\frac{1}{4}$ lb.
Sugar, $\frac{1}{2}$ lb.	Cinnamon, 1 dessertspoon.
Eggs, 6.	Nutmeg, a little grated.
Raisins, 1 lb.	Almonds, $\frac{1}{4}$ lb.

1. Stone raisins, clean the currants, blanch and chop the almonds, cut up the peel.
2. Cream butter and sugar.
3. Beat yokes and add them to the butter alternately with the flour.
4. Then add stiffly beaten whites, lastly the fruit and spices.
5. Put into a greased and papered tin.
6. Bake in a slow oven about two hours.

GINGER CREAMS.

Sugar, 2 heaped teacups.	Ginger (chopped), 2 ozs.
Water, 2 heaped teacups.	

1. Boil sugar and water from ten to twenty minutes, or until when a little is dropped into cold water it forms a soft ball.

2. Add ginger and beat over a basin of cold water till mixture thickens.
3. Pour into a buttered dish; cut up when cold.

FIG SWEETMEAT.

Figs, 1 lb.

Lemon, juice of 1.

Almonds, 2 ozs.

1. Mince figs finely and soak them in the lemon juice.
2. Blanch and split the almonds.
3. Butter a shallow tin.
4. Put in a layer of figs, then a layer of almonds, cover with figs.
5. Place a piece of oiled paper over the top.
6. Put a heavy press on it and let it stand for a day.
7. Turn out and ice with Vienna icing.
8. Cut into strips or squares.

VIENNA ICING.

Butter, 1 oz.

Vanilla, a few drops.

Icing sugar (sifted), 3 ozs.

Boiling water, 1 teaspoon.

1. Cream butter, beat in sugar and other ingredients, and use as above.

AMERICAN FUDGE.

Sugar, 3 breakfast cups.

Chocolate, 2 dessertspoons.

Milk, 2 breakfast cups.

Chopped walnuts, 1 cup.

Butter, 2 ozs.

1. Cut the chocolate up roughly.
2. Put all ingredients except nuts into a thick saucepan.
3. Let all boil quickly for about $\frac{3}{4}$ hour, stirring frequently.
4. When a little dropped into cold water forms a soft ball it is ready.
5. Take off the fire, add nuts, and beat till it begins to thicken.
6. Pour into a greased tin.
7. Cut up when cold.

TURKISH DELIGHT.

Gelatine, 2 ozs.

Sugar, 2 lbs.

Cold water, $\frac{1}{2}$ pint.

Citric acid, a pinch.

Boiling water, $1\frac{1}{2}$ pints.

Lemon and rose essence.

1. Soak gelatine in cold water for $\frac{1}{2}$ hour.
2. Put into saucepan with boiling water and sugar.
3. Boil twenty minutes, take off fire, add citric acid.
4. Divide into two lots; flavour one with lemon essence.
5. Colour the other pink with cochineal and flavour with rose.
6. Pour into dishes; leave forty-eight hours.
7. Cut up and roll each piece carefully in icing sugar.

PRICES CURRENT AT CHRISTCHURCH IN FEBRUARY, 1917.

GROCERIES, ETC.

Apples, 3d. a lb.	Macaroni, 7d. and 9d. a lb.
Arrowroot, 8d. a lb.	Mace, 3s. 6d. a lb.
Bacon, 1s. 3d. a lb.	Mustard, 2s. 3d. a lb.
Baking powder, 1s. 4d. and 1s. 8d. a lb.	Oatmeal: (50 lbs.), 9s. 6d.; (25 lbs.), 5s.; (7 lbs.), 1s. 6d.
Borax, 8d. a lb.	Peel, candied, 1s. 2d. a lb.
Butter: factory, 1s. 7d.; separator, 1s. 4d.; dairy, 1s. 3d.	Pepper, 1s. 6d. a lb.
Candles: Colonial, 9½d.; English, 11d. a lb.	" cayenne, 4s. a lb.
Cheese, 1s. 1d. a lb.	Potatoes, 2d. a lb.
Cinnamon, 3s. 6d. a lb.	Raisins, 7d. and 9d. a lb.
Cloves, 2s. a lb.	Rennet, Colonial, 1s. 4d.; imported, 1s. 10d. a bottle.
Coal, State, 42s.; Westport, 52s.; Australian, 54s. per ton.	Rice, 2½d. a lb.
Cocoa, 3s. and 3s. 6d. a lb.	Rice, ground, 3½d. a lb.
Coco-nut, desiccated, 8d. a lb.	Sago, 4d. a lb.
Coffee, 1s. 6d., 1s. 9d. and 2s. a lb.	Salt, 1d. a lb.; 7s. 6d. a cwt.
Cornflour, 6d., 7½d., and 8d. lb.	Semolina, 1s. 2d. a bag.
Cream of tartar, 2s. 6d. a lb.	Soap, 1s. a bar; 16s. a box of 18 bars.
Currants, 7d. a lb.	Soda, bicarb. of, 3d. a lb.
Dates, 4d. and 6d. a lb.	Soda, washing, 2d. a lb.
Eggs, 1s. 6d. a doz.	Sugar: (70 lbs.), 15s. 9d.; 2½d. a lb.
Figs, 7d. and 10d. a lb.	Sultanas, 9d. a lb.
Flour: (200 lbs.) 33s.; (100 lbs.) 17s. 3d.; (50 lbs.) 8s. 9d.; (25 lbs.) 4s. 6d.	Tapioca, 4d. a lb.
Gelatine: leaf, 5s.; powder, 3s. 6d. a lb.	Tea, 1s. 6d., 1s. 8d., 1s. 10d. and 2s. a lb.
Ginger (ground), 1s. 2d. a lb.	Treacle (see Golden Syrup).
Golden Syrup, 7d. a 2lb. tin.	Vinegar: colonial, 7d. a bottle, and 2s. a gallon; English, 1s. 5d. a bottle, and 3s. a gallon.
Ham, 1s. 1d. a lb.	Worcester sauce: colonial, 1s. a bottle; English, 1s., 1s. 6d., 2s. 6d.
Kerosene: tin, 7s. 3d.; case, 14s. 3d.	Yeast, compressed, 6d. a pkt.
Lard, 1s. 1d. a lb.	
Lentils, 4d. a lb.	

MEAT.

Beef, from 7d. to 1s. per lb.	Pork, from 11d. to 1s. per lb.
Corned beef, from 7d. to 9d. per lb.	Sausages (beef), 5d. per lb.
Lamb, from 9d. to 10d. per lb.	" (pork), 8d. & 9d. per lb.
Mutton, from 4d. to 8d. per lb.	Veal, from 5d. to 9d. per lb.
Mutton Chops, 7d. and 8d. per lb.	

INDEX

- Aberdeen Sausage, 133.
 Accounts, household, 131.
 Adulteration of foods, 162.
 Airing clothes, 98.
 Albumen, 6, 10, 14, 22, 115, 122.
 Alcoholic beverages, 160.
 Alimentary canal, 64.
 Alkalies used in Laundry Work, 80.
 Almond Fingers, 166.
 Alum water, 97.
 Apple, Fritters, 168; as food, 102; in Red Jelly, 105; Pie, 30; Baked, 70.
 Apricot Jam, 107.
 Arrangement of Household Work, 24, 34.
 Arrowroot Gruel, 145; sauce, 156.

 Babies, feeding of, 143.
 Baby's clothes, 100; bottle, 143.
 Baking, 15, 18, 104, 126.
 Baking powder, 48.
 Balanced ration, 6, 119.
 Bananas, 103; Custard, 134; Jelly, 139.
 Barley, 44.
 Batter, ingredients of, 27.
 Bed, making a, 28.
 Beef, economical, 128.
 Beef Olives, 163.
 Beefsteak Pie, 118.
 Beefsteak Pudding, 140.
 Beef Tea, 67.
 Beverages, 11, 69, 156-159, 160-161.
 Bicarbonate of soda, 48.
 Bile, 64, 133.
 Blackleading, 9.
 Blankets, washing, 79.
 Bleaching, 88; straw hats, 100.
 Blouse, washing and ironing of, 88.
 Blue, 75, 86.
 Boiling, 14, 22, 126.
 Bone-makers, 29.
 Bones, composition of, 112, 138.
 Borax, 87.
 Bottling, Fruit and Vegetables, 150, 165.
 Braising, 15.
 Bran, 43, 80; bran water, 81.
 Brawn, 58.
 Bread and Butter Pudding, 58.
 Bread and Milk, 144.
 Bread-making, 109, 110.
 Breakfasts, planning of, 151-2.
 Broiling, 15, 115.

 Broths, 32.
 Brown Breadcrumbs, 58.
 Brown Gravy, 19; soup, 116.
 Brushes, cleaning of, 37, 41-42, 98.
 Butter-fat, 10.
 Butter, to keep, 159-160; adulterated, 163.

 Cabbage, Boiled, 20; Food Value of, 26.
 Cake-making, 59-61.
 Calf's Head, 155.
 Caramel, 175.
 Carbohydrates, 6, 11, 21.
 Carbonaceous foods, 6, 21; quantity required, 119; for children, 144.
 Carbonate of soda, 73, 87.
 Casein, 10, 14.
 Cauliflower au Gratin, 162.
 Cereals, 42-44.
 Charts, food, 42, 102, 103, 122, 166.
 Cheese, 46, 47.
 Cheese Pudding, 124.
 Cheese Straws, 121.
 Children, food for, 10, 143-144, 157.
 Chloride of lime, 88.
 Christmas Cake, 175.
 Cleaning, coal stove, 9; gas stove, 10; floors, 12; linoleum, 13; carpets, 13; sink, 17; windows, 17; sitting-room, 28; bedroom, 28; clothing, 30; boots and shoes, 31; laundry utensils, 76-78; hair brushes, 98; sponge, 98; hats, 99; metals, 139-140; yard, 141.
 Clearing the table after meals, 146.
 Climate in relation to food, 120, 137.
 Clothing, care and cleaning of, 30-31; in relation to health, 48; suitable, 99.
 Coal, economy of, 59.
 Coal range, 8, 149.
 Cocoa, 157, 158.
 Coco-nut Ice, 72.
 Coffee, 69, 129, 157, 158.
 Coffee Cake, 169.
 Colcannon, 161.
 Colonial Goose, 173.
 Collars, laundering of, 84.
 Condiments, use and abuse of, 56-58.

- Confectionery, 11, 71, 138, 175.
 Conserve, 151.
 Cook, essentials of good, 7.
 Cookery, defined, 6.
 Cornflour Mould, 45.
 Cornish Pastie, 30.
 Cost of average meal, 120; cost of groceries, meat, etc., 177.
 Cottage Pudding, 65.
 Cotton, 96.
 Cottons (Coloured), laundering of, 81.
 Cottons (White), Washing of, 75.
 Cream of tartar, 48, 163.
 Cretonne, washing of, 82.
 Crimping of frills, 96, 97.
 Croquettes, 114, 152.
 Cup Pudding, 156.
 Curds, 10.
 Currants, 103.
 Curried Eggs, 36.
 Curried Sausages, 47.
 Curry, 57.
 Curry and Rice, 34.
 Custard, Baked, 67; Sago, 70; Banana, 134.
 Cutlets, 167.
- Daily duties in the house, 24.
 Damask, 96.
 Damper, 171.
 Dampers, 8.
 Dates, Iced, 72.
 Decoction, 158.
 Dextrine, 110.
 Dextrose, 10.
 Diet, varied, 6; for invalids, 68; varied for climate, 137; for infants and children, 143-4; vegetarian, 145.
 Digestion, 11, 63, 133.
 Dinners, planning of, 153; packing portable, 154; preparation of, 173.
 Dish-cloths, care of, 37.
 Disinfectants, 94, 137, 141.
 Domestic Science, defined, 5.
 Dough Nuts, 136.
 Dried fruits, 103.
 Dust, 136-7.
 Dust-bin, 141.
 Dwellings, in relation to health, 48.
- Economy, of food, 55, 119; of fuel, 59, 149; of cleaning material, 70; of income, 131; general, 148; thrift, 168.
 Eggs, albumen in, 14; composition and food value, 35; uses in cookery, 36; preservative, 86; in diet, 122; preserving, 123; soap, 123; tests for freshness, 129.
- Electric stoves, 150.
 Emulsification, 64, 133.
 Exeter Stew, 168.
 Experiments, with carbon, 8; milk, 10; starch, 11, 84; albumen, 17; salt and soda on vegetables, 17; raising agents, 49; hard and soft waters, 74; alkalies and acids, 80; banana, 104; sugar, 107; flour, 117; eggs, 123; digestion, 133.
- Fabrics, comparison of, 96.
 Fat, 21, 51-52, 112; in egg, 123; to render and clarify, 135; in children's food, 144; fat meat economical, 148.
 Fehling's Solution, 107.
 Fibrin, 14.
 Figs, Stewed, 70; as food, 103; Sweetmeat, 176.
 Fire, how to lay, 7.
 Fireless Cooker, 170-171.
 Fish Cakes, 33.
 Fish, composition, structure, and food value, 38; cooking, 39; how to choose, 129.
 Fish, fried, 27; boiled, 39; steamed, 67; Pie, 139.
 Flaky Pastry, 118.
 Flannelette, 97.
 Flesh-forming foods, 6, 14.
 Flour, 43, 117, 129.
 Food, defined, 5; uses of, 5; classes of, 6; for invalids, 68-70; for infants and children, 143-4; vegetarian, 145; adulteration of, 162, 163; charts, 166.
 French Beans, 20.
 Fricassée of rabbit, 142.
 Fried Egg and Fried Bread, 27.
 Fritters, 55, 114, 168-9.
 Fruits, 102-104.
 Fruit Squares, 113; stewed, 12; bottling, 150, 165.
 Frying, 15, 26, 135.
 Fudge, American, 176.
 Furniture, care of, 41; polish, 70.
- Gas, economy of, 59, 149.
 Gas stove, 9, 149.
 Gastric juice, 63, 133.
 Gelatine, 14, 22, 138.
 Ginger Beer, 159.
 Gingerbread, 163.
 Ginger Creams, 175.
 Glucose, 10, 106.
 Gluten, 14, 49, 109, 117.
 Glycerine, 86.
 Goffering, 96-97.
 Grapes, 103.
 Grape-sugar, 10, 107.

- Grates, economical and wasteful, 134, 135.
 Gravy, Brown, 19; gravies, 32.
 Green Peas, 105.
 Grilled Chop or Steak, 116.
 Grilled Herrings, 153.
 Griller, gas, 10.
 Grilling, 15, 115.
 Ground Rice Mould, 145.
 Gruel, 67, 145.
 Gum Arabic, 91.
- Ham, 129.
 Haricot Beans, 146.
 Hats, cleaning of, 99.
 Health of person, 47-48.
 Heat-givers, 6, 21, 29.
 Herbs, 57, 165.
 Herrings, grilled, 153.
 Hop Beer, 158.
 Hot water service, 172.
 House fly, a disease carrier, 48.
 Household Accounts, 131.
 Household work, arrangement of, 24.
 Housekeeper's duties, 118.
 Housewifery defined, 5.
 Housewife's tables, 13.
 Humanized milk, 143.
 Hunters' Stew, 171.
- Icing, 166, 169, 176.
 Infants, food for, 143.
 Infusion, 158.
 Invalid Cookery, 68-70.
 Iodine test for starch, 10.
 Irish Stew, 16, 141.
 Irons, 78.
- Jam-making, 106-108.
 Jam Pudding, 155; sauce, 155.
 Jam Roly Poly, 127.
 Joints of beef, 18.
 Joints of mutton, 22.
- Kabobs, 171.
 Kedgerree, 113, 152.
 Kidneys, stewed, 153.
 Kitchen, care of, 20; sink, 17; utensils, care of, 51; refuse, 140.
- Laces, laundering of, 92-93.
 Lactose, 10.
 Lamb, 128.
 Larder, care of, 21.
 Laundry Course, 73; Utensils, 76.
 Laying the table, 61, 146.
 Leather, qualities of, 31.
 Left-over food, 55, 119, 148.
 Legumen, 14.
 Legumes, 26, 119.
- Lemon Pudding, 167.
 Lemon Syrup, 159.
 Lentil soup, 33; pie, 146.
 Lime, 6, 10.
 Lime water, test for carbonic acid gas, 49; used to soften water, 73; in humanized milk, 143.
 Linen, 96; linen press, 98; washing white, 75.
 Linoleum or Furniture Polish, 70.
 Liver and Bacon, 27.
- Macaroni Cheese, 47.
 Macaroni and Meat Shape, 162.
 Madras curtains, ironing, 99.
 Maize, 44.
 Mangling, 76, 78.
 Manners at table, 63.
 Marketing, 127-130, 148.
 Marrow, Vegetable, 19.
 Mashed Potatoes, 65.
 Measures, liquid, 13; dry ingredients, 14.
 Meat Cakes, 34.
 Meat, 14, 22, 51, 111-112, 148, 160.
 Meat and Tomato Savoury, 105.
 Meat Safe, care of, 45, 160.
 Metals, care and cleaning of, 51, 139.
 Methods of Cooking, 14.
 Methylated spirit, 160.
 Mildew, 38.
 Milk, 10, 29, 46; humanized, 143; in vegetarian diet, 145; to keep (pasteurized), 159, 164; adulterated, 163; sterilized, 164.
 Milk puddings, rules for, 11; recipe, 12.
 Milk Rolls, 165.
 Mincemeat, 147.
 Mince Pies, 147.
 Mineral substances, 6, 29; quantity of food required, 119.
 Muslin Curtains, ironing of, 99.
 Mutton, neck of, boiled, 23; 128.
 Myosin, 14.
- Neck of mutton, boiled, 23.
 Nitrogenous foods, 6, 14; quantity required, 119; for children, 144.
 Nursing, 65-66.
 Nut Loaf, 140.
- Oatmeal Biscuits, 45.
 Oatmeal Cakes, 45.
 Oats, 42, 44.
 Oils, 21.
 Oil stoves, 149.
 Omelet, 124, 152.

- Onion Pie, 167.
 Oranges, 103, 143.
 Ox-tail, Stewed, 130.
- Pancakes, 132.
 Pancreatic juice, 64, 133.
 Pan Mixture, 71.
 Pantry, care of, 21, 159.
 Papier-mâché basins, 77.
 Pasteurization, 159, 164.
 Pastry, rules for, 29; flaky, 118.
 Pepsin, 64.
 Periodical duties in the house, 25.
 Phosphorus, 6, 14.
 Pickles, Mixed, 108.
 Pikelets, 50.
 Plain Cake, 61.
 Planning of daily meals, 119;
 breakfasts, 151; dinners, 153.
 Plum Jam, 108.
 Plum Pudding, 147.
 Poached Egg, 144.
 Pork, 22, 128.
 Porridge, 44, 152.
 Portable Dinner, 154.
 Potato Border, 55; Soup, 138.
 Potatoes, Baked, 19; Boiled and
 Steamed, 24; food value of,
 25; Chips, 27.
 Preserving fruits, 104, 150.
 Preservatives, harmless, 165.
 Prices, current, 128, 177.
 Prints, laundering of, 81.
 Proteids, 6, 14, 64.
 Protein, 10, 119, 148.
 Prunes, stewed, 70.
 Ptomaine, 169.
 Ptyalin, 63.
 Puddings, boiling of, 23.
 Purées, 32.
- Queen Cakes, 61.
 Queen Pudding, 142.
- Rabbit, roast, 19; stewed, 127;
 fricassée of, 142.
 Radiation, 125.
 Raised Pie, 121.
 Raising Agents, 48-49, 108.
 Raisins, 103.
 Ration, balanced, 6, 119.
 Reasons for cooking food, 6.
 Refuse, disposal of, 140.
 Re-heating cooked food, 113.
 Rennet, 10.
 Rice and Cheese, 113.
 Rice, to boil, 34; food value, 42;
 use and cooking, 44; cheap
 food, 148.
 Rissoles, 114, 115, 152.
 Roasting, 15, 18.
 Roast Meat, 19.
 Rock Cakes, 40.
- Roly Poly, Jam, 127.
 Rye, 42, 44.
- Saccharose, 10.
 Sago Custard, 70.
 Saliva, 11, 63, 133, 143.
 Salt, common, 6, 29, 87.
 Sauce, white, 20; Jam, 155;
 Arrowroot, 156.
 Sauces, 32, 40.
 Sausage Rolls, 118.
 Saving, 131, 168.
 Scone Loaf, 28.
 Scones, brown, 16; white, 16;
 fried, 50.
 Scouts' Cookery, 171.
 Scrambled Eggs on Toast, 36.
 Scrubbing-brushes, care of, 37.
 Scullery, care of, 20.
 Shepherd's Pie, 114, 115.
 Shirt, laundering of, 95.
 Shortbread, 130.
 Short Pastry, 29.
 Sick Nursing, 65, 66.
 Silk, 91, 92.
 Sink, kitchen, 17.
 Skirt, ironing of, 82.
 Soap, composition of, 85; sup-
 plies of, 130; powders, 86.
 Soda Loaf, 50.
 Soup as a food, 31; tomato, 155.
 Spices, 57, 129.
 Sponge, cleaning of, 98.
 Sponge Roll, 164.
 Sponge Sandwich, 37.
 Spring Cleaning, 25.
 Stains, removal of, 37, 74.
 Stale bread, etc., 55.
 Starch, 10, 11, 21, 83-84, 117.
 Starch, Boiled, 81, 84; cold
 water, 84.
 Steak and Onions, Fried, 136.
 Steaming, 15, 52-54.
 Steamed Treacle or Jam Pudding,
 54; Steamed Fish, 67.
 Sterilization, 159, 164, 165.
 Stew, Brown, and White, 16, 141.
 Stewed Apples, 12; Carrots, 54;
 Steak and Potato Border, 54;
 Tripe, 65; Kidneys, 153.
 Stewing, 15, 104, 126, 141-2.
 Stiffening Agents, 92.
 Stimulant, 156, 160.
 Stock, 32, 33.
 Storing of foods, 46.
 Sucrose, 10.
 Suet Dumplings, 23.
 Sugar, 10, 21; tests for, 107;
 properties when heated, 175.
 Sugar of milk, 10, 143.
 Sulphur, 6, 14.
 Sultanas, 103.
 Sweets, Home-made, 71; and
 gelatine, 138; requisites for,
 174; properties of sugar, 175.

- Table, how to lay or set, 61, 146.
 Table Linen, ironing and folding of, 89, 146.
 Tea, 69, 129, 156, 158.
 Tea-towels, care of, 37.
 Temperature, 26, 125.
 Tests for, carbon, 8; starch, 11; sugar, 107; gluten, 117; temperatures, 126; freshness of eggs and flour, 129; tinned foods, 130.
 Thermometer, 125, 126.
 Thermos Flask, 154, 170.
 Thrift, 168.
 Tinned foods, 130, 169.
 Toad in the Hole, 132.
 Toast, 153.
 Toffee, Fruit, 71; Everton, 72.
 Tomato Soup, 155.
 Treacle Tart, 118.
 Tripe, Stewed, 65.
 Turkish Delight, 176.
- Underclothing, 93.
- Vacuum cleaner, 13.
 Veal, 128.
 Vegetable Marrow, 19.
- Vegetables, food value of, 25; rules for cooking, 104-105; bottling, 150, 165.
 Vegetarian Cookery, 145-6.
 Ventilation, 101.
 Victoria Sandwich, 116.
 Vienna Icing, 176.
- Washing Day, 74.
 Washing-machines, 76.
 Washing soda, 73, 87, 137.
 Washing-up, 7.
 Water, food value of, 29, 143; composition, hard and soft, 73.
 Water-glass, 86, 123.
 Weekly Work, 24, 34.
 Welsh Rarebit, 166.
 Wheat, 42, 43, 117.
 Wheatmeal Loaf, 50; porridge, 152.
 Whey, 10, 143.
 White Sauce, 20.
 Wood, care of, 40-41.
 Wool, 96.
 Woollens, Washing of, 79.
 Wringer, 77.
- Yard, cleaning of, 141.
 Yeast, 108-110, 136.
 Yeast Buns, 111.

PRINTED BY
WHITCOMBE AND TOMBS LIMITED
CHRISTCHURCH

